This magazine is published to promote sound thought upon and concerning industrial medicine and traumatic surgery. To that end it will contain articles, news items, reports, digests, and other presentations, together with editors' comments. The editorial policy is to encourage frank discussion. On this basis contributions are invited.

Industrial Medicine

Reg. U. S. Pat. Off.

The editors will exercise care in checking on the accuracy of data printed, but in all other respects articles and opinions of which expression is allowed are the opinions of their authors—the editors reserving in all cases the right to comment on the same, in the current or any subsequent issues, as they may be inclined.

The Journal of Industrial Health, Occupational Diseases and Traumatic Surgery

With which are consolidated "The Industrial Doctor" and "International Journal of Medicine and Surgery."

The Science, the Law and the Economics of Industrial Health

Volume 13 | July, 1944 | Number 7

WHO CAN WORK?

—Symposium, at the Twenty-Ninth Annual Meeting of the American Association of Industrial Physicians and Surgeons, St. Louis, May 11, 1944—

JOHN J. WITTMER, M.D.,
Presiding

ONE of the outstanding features of the Second "War Conference"—conducted by the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, the NATIONAL CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS, the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION, and the AMERICAN ASSOCIATION OF INDUSTRIAL NURSES, at St. Louis, May 9-14—was the Symposium on "Who Can Work?" This was held as a group discussion, running concurrently with the joint meeting of the industrial physicians and surgeons and the industrial hygienists on Thursday, May 11, in the afternoon. DR. JOHN J. WITTMER, Personnel and Medical Director, Consolidated Edison Company of New York, was the presiding officer. The seven papers and discussions follow in the order in which they were given, except for DR. CARLISLE'S elaboration of his remarks (on page 533) which will be included in his article, "Evaluation of the Cardiac Patient in Industry," soon to appear in these pages.

The Pathological Heart in Industry

M. M. SHAFER, M.D.,
Medical Director,
Refrigeration Division, General Motors Corporation,
Dayton, Ohio

A NEW or an old employee presents himself for an examination, and the physical findings demonstrate a definite cardiac lesion with or without complicating lesions in other organs. What is to be done with such an employee or prospective employee as regards work in industry?

First it is essential, as far as possible, to determine a few general principles concerning the cardiac condition found, namely:

1. Etiology.
2. Location and extent of damage.
3. Degree of functional impairment at the time.
4. Capability of improvement or maintaining its present functional capacity, or "prognosis."

1. For our purposes in determining the placement possibilities and the working capabilities of the employee we need pay little attention to the etiology other than its bearing on prognosis. Treatment is left to the family physician or the cardiologist. The etiology, if determined accurately, may have an important bearing upon treatment and the maintaining of the functional capacity which permits proper placement. For example, myocardial weakness following acute infectious disease, if diagnosed and properly treated, should completely recover without functional impairment. On the other hand a congenital lesion will remain, and the etiology only helps us in arriving at a prognosis based upon the existing damage and the degree of functional impairment, so that proper placement can be made.

2. It is important to ascertain, as nearly as we can, the exact location of the heart damage and the extent of that damage. If our prospective employee has a valvular lesion it is important to determine how extensive that lesion is. Has more than one valve been damaged? Is the heart enlarged? What type of valvular lesion are we dealing with? What was the etiology? What was the duration of the illness? What was the treatment? What is the work history prior to this examination?

3. The degree of functional impairment at the time of the examination should be ascertained as nearly as possible. Does the cardiac response to effort reveal any abnormal findings? Is there or has there been any edema of the feet and legs, or dyspnea on exertion? How much exercise does he take? Type and character of the exercise?

Does examination of urine reveal evidence of albuminuria, inability to concentrate? Has the patient now or previously had substernal, precordial or radiating pain into neck, shoulder, left arm? An E.K.G. interpreted by a good cardiologist is of great value in the determination of the existing myocardial damage. In other words, we should determine as nearly as possible the present state of the cardiac compensation in relation to the existing damage and the ability of the person to work.

4. Some heart lesions found on routine examina-

tions are capable of great improvement under proper guidance and therapy. Others are capable of no improvement and will steadily follow a downward course. Still others can be held stationary, with the maintenance of the present degree of functional impairment unchanged over many years duration.

Frequent re-check clinical and laboratory examinations are essential in order to determine what changes are taking place.

Repeated E.K.G. tracings are often our best check as to the progress of the myocardial damage.

Repeated examinations of the urine for albuminuria, ability of the kidneys to concentrate, and functional kidney tests are important in the cardiovascular renal employees. (If the kidneys show increased impairment of function we can expect an increased impairment of the myocardial symptoms.)

IN CONSIDERING the cardiac employee and his capacity for work we are faced with a tremendous difficulty not encountered in any other ailment. Statistics prove beyond question of a doubt that the leading cause of death in the United States is heart disease. We have no set criteria, as in pulmonary tuberculosis, whereby we can determine that the disease is quiescent or arrested, and advise the employee quite accurately as to his or her capacity for work or exercise.

Physical activity in the cardiac employee must be limited according to the degree of functional impairment at the time of the examination.

In placement of an employee with impaired heart function *the proper level of work* becomes a most important consideration for correct therapy. Rest is still a most important therapeutic measure in the treatment of cardiac functional impairment, and *the proper level of work* that will permit as much heart rest as possible without undue strain and yet eliminate the worry of unemployment is an ideal to be strived for.

On the basis of appropriate degree of physical activity the American Heart Association puts the cardiac patient into one of five classes.

Class A are those patients whose physical activity needs no restrictions.

Class B are those who need no restrictions of ordinary physical activity, but who should be advised against unusually severe effort.

Class C is composed of those who need some restrictions even of ordinary activity.

Class D comprises patients whose ordinary physical activity must be greatly reduced.

Class E are those at complete bed rest.

It is quite obvious that classes D and E are not to be considered in the scope of this paper, for employees in these groups are not able to follow gainful productive employment in modern war production.

A further question of importance that should be determined before an employee is placed in one of the above five classes is what is the functional impairment, or *how much physical activity* can be tolerated without discomfort. Here again we have several classes which depend almost entirely upon history.

Class I are those who experience no discomfort, neither pain nor dyspnea, on ordinary physical activity.

Class II are those who experience discomfort of some sort even on ordinary physical activity. This discomfort may be dyspnea, pain or undue fatigue which gives evidence of cardiac insufficiency or angina.

Class III are those who are comfortable at rest but experience discomfort on less than ordinary activity.

Class IV are those who are uncomfortable when at rest.

Classes I and II only can be considered in the scope of this paper.

Again it is obvious that an employee may be in Class I, based on functional impairment as far as history is concerned, but would be placed in Class C as regards physical activity. (Such a case would be an asymptomatic aortic aneurism.)

Similarly a well compensated valvular lesion may be placed in Class I and Class A, that is, according to history there is no discomfort on ordinary physical activity and such an employee can continue on at any ordinary moderately active job.

The private practitioner of medicine and the industrial physician have entirely different viewpoints when dealing with the cardiac patient. The former is mainly interested in alleviating troublesome symptoms, and will often times return a patient to work with a note stating ability to resume employment, when examination reveals clearly the inability of the employee to work at all or at best only under great restriction to his physical activity. We must determine, through careful history physical examination, blood pressure readings (often repeated), urinalyses, x-ray, electrocardiogram and any other means at our disposal, the ability of the employee or applicant to work and in what capacity with safety to himself. We must also consider the safety of fellow employees in case of sudden disability or death. And, lastly, we must consider the liability of the company for responsibility in case of disability or death occurring while at work.

What common types of heart disease are we most likely to encounter in our routine industrial work?

1. Hypertension:
   (a) Essential. (b) Malignant.
2. Rheumatic Heart Disease.
3. Syphilitic Heart Disease.
4. Coronary Artery Disease:
   (a) Angina pectoris. (b) Coronary thrombosis.
5. Arrhythmia:
   (a) Tachycardia. (b) Auricular fibrillation.
   (c) Heart block. (d) Bradycardia.
6. Congenital Heart Anomalies.

The subject of hypertension, "A Suggested Yardstick for Judging Employability," by DR. W. L. RITTER, Mississippi State Board of Health, Division of Industrial Hygiene, was thoroughly discussed in the March, 1944, issue of INDUSTRIAL MEDICINE. The criteria dealing with diagnosis, employability, job placement and thorough medical supervision were clearly outlined and will not be repeated here.

It has been estimated by reputable cardiologists that the average life expectancy of an individual with rheumatic heart disease is 20 years less than the average individual, and the usual duration of the rheumatic heart disease is from 20 to 30 years. Assuming that our employee or prospective employee gives a history indicating 10 years' duration of the rheumatic heart disease, then, by fulfilling our original criteria mentioned in the beginning of the paper, we would expect 10 years of productive work on the proper type job. We have placed many employees with rheumatic heart disease on light work, and have observed them for many years producing efficiently and maintaining a social status equivalent to their fellow workmen.

The employee with syphilitic heart disease presents a different problem, as the lesions progress unless early adequate treatment has been followed thoroughly. Once heart failure or insufficiency symptoms develop the prognosis is usually bad; in addition the onset of symptoms of heart failure is often abrupt. We have instituted blood tests on all new employees and, on old ones on return to work, examinations after a period

of illness. A follow-up of adequate antisyphilitic treatment is being carried out. Heavy work should be avoided, as it is considered a precipitating factor in development of aortic dilatation or valvular insufficiency. Through these means the industrial physician can aid in the control of syphilis and thereby eliminate some cases of syphilitic heart disease.

Coronary artery disease will always be with us, especially in the men who are in the fourth, fifth and sixth decades of life. With advancing years the coronary arteries, like others, become thickened and hardened from arteriosclerotic changes in their walls. Advanced coronary sclerosis has been found compatible with a fairly good myocardial function. On the other hand a few millimeters of sclerosed coronary artery may cut a man down in the prime of life who has never had any symptoms of heart disease. A gradual progressive cardiac decompensation and insufficiency may be due entirely to coronary artery disease.

Angina pectoris, the pain of cardiac origin, is associated with coronary artery disease. When the angina is produced by slight effort or emotional disturbances the applicant is unemployable and the old employee must stop work. Employees who give a history of angina pectoris attacks should be placed on sedentary type of job requiring little physical effort and comparatively free of mental strain.

Coronary thrombosis is sudden and dramatic in its onset. History or knowledge of such an attack necessitates the placement of such an individual on a very sedentary job and only then if symptom free and the E.K.G. shows no progressive changes after two months of rest. The average life expectancy in individuals known to have angina pectoris or coronary thrombosis is about four and a half years. However, many individuals live many years beyond the average and often times die of other diseases.

The employee who suffers from tachycardia is always incapacitated during the attack, but recovery and return to normal have occurred in all my contacts within a few minutes to a few hours under sedation. Nervous tachycardia is frequently met with on examination of new employees, but is of no clinical significance and is no cause for rejection.

Cardiac arrhythmias, such as dropped systole in the young healthy individuals with no demonstrative evidence of impaired heart function, have been considered as a matter of interest from the examination standpoint but have not been used by the writer as a cause of rejection of these individuals for ordinary industrial employment. We have had many E.K.G. tracings made on these individuals by cardiologists, and reports have been satisfactory.

However, if irregularity develops in a man past middle age, we approach the problem with a different attitude and change this individual's employment to one of a sedentary type. An arrhythmia developing in a man of this age may be our first indication of impending heart damage. An E.K.G. will very often show evidence of impaired cardiac function.

Some arrhythmias, such as auricular fibrillation, heart block, ventricular fibrillation, etc., incapacitate the employee for work, and a cardiologist should determine the extent and seriousness of the lesion and give a personal opinion as to the ability of such an employe to resume gainful employment.

SUMMARY: The employee with pathological heart condition can be placed in many industries on gainful occupations that will neither harm himself or his fellow employees nor work an undue hardship from a compensation liability standpoint on the employer.

We are faced with the problem of an ever increasing number of pathological heart conditions which necessitate proper placement in employment. There have been, to date, no effective medical procedures that have eliminated the increasing number of pathological heart cases.

Perhaps the continued usage of the sulfonamides and penicillin in acute infections will tend to reduce the group of pathological hearts resulting from infection. A more thorough and complete anti-syphilitic campaign is necessary if we hope to reduce the number of syphilitic heart disease cases.

It is obvious that the placement of pathological heart cases depends upon the type of industry and the specific job requirements as well as the extent of the cardiac impairment. Industries with variable types of jobs have more opportunities to place the individual with cardiac impairment than those that are essentially heavy industries.

References

All articles "Cardiovascular Disease" printed in INDUSTRIAL MEDICINE from October, 1933, to April, 1944.

Discussion

DR. J. M. CARLISLE (Rahway, New Jersey): DR. SHAFER was kind enough to send me this paper. I have endeavored to apply the selective placement program that he has outlined to an industry whose problems are largely in the toxicological field, where the employee is exposed to a host of some 3,000 chemicals that are, in the main, toxic, either during their manufacture or in the final stage.

I do not believe that it is possible for one to overemphasize that part of DR. SHAFER'S presentation which deals with selective placement of these individuals; i.e., fitting square pegs into square holes and round pegs into round holes.

On the other hand, there is one point which I believe was not emphasized in DR. SHAFER'S paper to the extent that we feel it necessary in our industry, and that is the question of whether or not the patient will be susceptible to sudden syncope or death.

Neuropsychiatric Aspects

GORDON A. EADIE, M.D.,
Eastern Aircraft Division,
General Motors Corporation,
Linden, New Jersey

THE WAR has focused for everyone the importance of the mental, emotional, moral and spiritual problems of our people. Nowhere has this been more true than in industry. Although we have done a great job of licking the mechanical problems in production, we are still faced with a multitude of human relations problems which must be solved if we are to do the best possible work. Human bottlenecks are one of our chief obstacles.

The subject for discussion today, "Who Can Work," indicates the need for proper selection and proper placement of our workers. This should prevent many of our human bottlenecks. One of the most important factors in placement, as any employment man will tell you, is the personality factor—whether a man is fitted for the job *and* personally compatible with those with whom he will be working. The necessity of considering this factor, especially in war time, is shown by the following points:

1. The increased strain on everyone's nervous system.

2. The classification of large numbers of men as 4F on neuropsychiatric grounds.

3. The release from service of large numbers of men

for neuropsychiatric disabilities, from both combat and non-combat areas.

4. The increasing percentage of more or less unstable workers who in normal times would not find their way into industry.

It is our conviction that the majority of these folks, properly placed and properly followed, make satisfactory workers. Himler[1] brings this out: "Among the 300 Wayne County (Michigan) rejectees (for neuropsychiatric reasons), 88% were employed at the time of their examination and expected to continue in their jobs."

As indicated above, our subject is naturally divided into two parts: selection, or diagnosis, and placement.

Diagnosis

HOW CAN we recognize these people when we see them before employment? Needless to say, unless we spot them, we aren't so likely to place them right. If we miss them, many of them will turn up sooner or later with complaints of nervousness, insomnia, headaches and other functional ailments; others will show a high accident rate or frequent absences, or they may have numerous reprimands or grievances. Of course, I don't mean to imply that by proper placement we can completely eliminate these difficulties—that would be the millennium!

In our pre-employment procedure we have three main diagnostic tools:

1. The employment application form.
2. Intelligence, aptitude, personality and other tests.
3. The interview and examination.

From the application form we may receive certain warnings such as "4F—nervousness," "CDD—nervous condition," or there may be a history of frequent changes of job. I saw one poor fellow who had worked at four different jobs in as many weeks—we estimated his I.Q. as around 60. He thought he deserved at least $1.00 an hour! The application may show a prison sentence or other legal complication, or a discrepancy in dates or other details.

Many concerns use intelligence tests, aptitude tests and others. In most cases these seem to be more practical if they are brief, simple and easy to mark. It has been suggested that instead of giving formal tests a number of appropriate and informative questions be worked into the employment application. The answers might be more revealing than a formal test.

A well-planned interview and examination is the most helpful of the three diagnostic tools. The examiner should have the results of the tests and answers on the application form at hand as a guide in the interview. He may find discrepancies between statements on the application and his findings on examination. The other day I examined a man aged 35. His application indicated that he had been classified 4F owing to poor eyesight, but his vision checked 20/20 in both eyes! Following a hunch, I asked whether he had ever had a sentence in court. After a moment of silence he said, "Yes—for murder." Then, on questioning, he explained that the judge had commuted the sentence, since the circumstances were not clear. He said he had shot the man only after the man had shot him, and then showed me two bullet scars in his right chest in front and two behind. I wasn't surprised he was 4F!

Dr. L. E. Himler[2] has described a useful "Brief Personality Appraisal Technique" to be used on pre-employment examination. This can easily be combined with the routine physical examination. It is important, of course, to be acquainted with the commoner variations from the normal in personality. The writer attempted to describe these variations in a recent paper.[3]

Placement

THE QUESTION really is, "Who can work *where?*" A discussion of this can be divided into three sections:

1. Type of work.
2. Physical surroundings.
3. Human environment.

TYPE OF WORK: Is the applicant suited to the job available? In answering this it is helpful to have a description of jobs from the standpoint of physical and mental requirements, i.e., whether heavy, medium or light physically, what training and skills are required, etc.

Many nervously unstable people tolerate shift work poorly. Many do poorly on heavy physical work. We have a veteran who was discharged from service, due to a peptic ulcer with nervousness. He was placed by mistake on a heavy job as a material handler on a two-shift basis. After working through a few shifts he developed symptoms and was referred to us by his foreman. We transferred him to a job as a checker—very light work—on a steady day shift. He has been doing O.K. since.

A high percentage of our veterans are restless, unstable and adjust poorly in humdrum jobs. We have tried to consider this in placing them. One of our Navy boys was extremely tense and jumpy and somewhat demanding when first seen. Fortunately we had a job in the time department open. He was bright enough to handle it, so we placed him there. During the ensuing months he improved steadily and liked the job, since it involved moving about the plant a good deal, keeping records and talking with people. I saw him several times and helped him realize that he was still very much in the war—he responded well and became a real asset, affecting positively the spirit of his department.

JOB SURROUNDINGS: Consider such points as amount of noise, smoke, fumes, odors and temperatures. Also climbing, working at high levels, dangerous machinery and other safety hazards. Obviously epileptics should be safeguarded pretty well.

A good many of our veterans cannot tolerate the nervous effects of loud noise. A marine corporal, who had been through a large part of the fighting in the South Pacific and had sustained a severe head injury, became subject to grand mal convulsions and was given a CDD. He was first placed in a very noisy area in the plant and soon began having spells. We then placed him on Dilantin and gave him a job as inspector in the paint department, a fairly quiet spot. He had no more convulsions.

Another veteran, who had served in the Army in the Tunisian campaign and sustained a concussion, was released from service due to "battle reaction." He was jittery but quite sincere when hired. Through an oversight he was placed in a riveting job and shortly developed typical anxiety attacks with weakness, pallor, rapid pulse and a fear of impending death. As soon as this came to our attention we advised a transfer to a quieter part of the plant. In the new location there was a gradual improvement. I saw him a number of times in the office and eventually the attacks cleared up. This man had a real faith which I believe was a factor in the disappearance of the attacks and the return of a measure of stability.

HUMAN ENVIRONMENT: As stated in the introduction, one of the most important factors in placement is compatibility with fellow workers. Actually the problem is more than just simple person-to-person relationships. The success of any individual's adjustment depends upon his success in meeting the underlying

tensions in the life of the organization. These tensions are now at a high level, as all of us well know. We see them in the restlessness and ill temper of the people we treat in the dispensary, in friction and bitterness between worker and worker, worker and boss, supervisor and supervisor, and especially in the relations of labor and management. During my residency in Detroit we saw the same tensions, fanned by divisive forces that aimed to gain control by the "divide and conquer" technique, boil over in bloody strikes. We treated the basal skull fractures, the stab wounds and beaten bodies—and wondered why—why all this foolishness and tragedy.

Today those same divisive forces are harder at work in industry than ever. Senator Truman[4] says, "The forces of disunity in our national life appear to be stronger today than perhaps at any time in our history. And they are growing stronger." How can we win against such forces? To quote the Senator again, "If America can win the battle for industrial teamwork, then we will be on the road towards winning the greater battle for national unity." Victory in this battle will help greatly in creating a human environment in which tension is minimized.

I believe that we industrial doctors are in a peculiarly fortunate position to bring the answer—that we can give a healing philosophy to industry that will surely be etiological, for it will get at the root causes of tension and conflict. Basically these causes are moral—greed for money, ambition for power and control, fear of economic insecurity, of censure and sometimes of bodily harm, and irresponsibility—"let George do it"—or perhaps today, "let the government do it."

To cure these causes we will have to build leadership and spirit that put the country before personal and party interest.

We must unite the sound elements in both labor and management against the selfish forces in both.

This is a mighty big order—and one which can't be filled over-night. However, I believe it is possible, because there have been many instances in which results have been achieved.

For example, a well-known surgeon, a personal friend, demonstrated how the doctor, because he has no axe to grind, can bring the conflicting elements in industry together. He was concerned about the friction between labor and management in a certain industrial organization. He first won the friendship and confidence of the manager and of the leader of the union. Each began to realize that their lack of teamwork was sabotaging the war effort. Then he brought them together and told them he felt that broken relationships, as well as broken bones, could be knit provided the jagged ends were brought into alignment.

He related how he himself had found that teamwork grew when he apologized honestly for the places he had been wrong, at home and at the office.

The natural thing then happened—the two men relaxed their tension, got together on most of the things they'd been fighting over and decided to pull together for the sake of the war effort.

The immediate result was to make three imminent strikes unnecessary, one of which, it was estimated, would have cost the country $100,000 a day, not to mention the emotional strain and tension of all the people concerned.

This kind of healing philosophy for industry, I believe, is essential for success in our employment of those with neuropsychiatric handicaps. It is truly preventive medicine.

Conclusions

WITH proper methods of selection and placement most people with neuropsychiatric conditions can work in industry.

2. The three main tools in selection are: (a) the employment application; (b) intelligence, personality and other tests; (c) the interview—examination.

3. The three main angles to be considered in placement are: (a) type of work; (b) job surroundings; (c) human environment.

4. The human environment is today of major importance not only in successful placement of people with neuropsychiatric problems but also in the success of our total industrial war effort. The industrial physician can play a significant part in eliminating friction and building sound human relations. These are essential in laying solid foundations for the postwar world.

Bibliography

1. L. E. HIMLER, M.D.: The Psychiatric Approach to Current Mental Health Problems In Industry. Presented at the Industrial Medical and Surgical Conference, Detroit, Michigan, April 6, 1944.

2. L. E. HIMLER, M.D.: A Brief Personality Appraisal Technique for Industrial Physicians. Presented at the Eighth Annual Medical Conference, General Motors Corporation, Newark, New Jersey, April 14, 1944.

3. G. A. EADIE, M.D.: Sound Minds For Industry. Presented at the Eighth Annual Medical Conference, General Motors Corporation, Newark, New Jersey, April 13, 1944.

4. TRUMAN, HONORABLE HARRY S.: Statement in "Battle Line For American Industry," p. 11, 1943. Judd & Detweiler Incorporated, Washington, D. C.

The Return of the Injured to Work

FRANK E. GRAY, M.D.,
Medical Department,
Westinghouse Electric & Manufacturing Company,
East Pittsburgh, Pennsylvania

THERE is no question in our minds today of a genuine manpower shortage in industry. The plan to employ only the physically sound man is surely discarded. The common duty of the industrial medical examiner and the personnel man is to choose the task each man can do and judge the success of his assignment by observing the new employee's performance.

We have been advised by the National Institute of Health of the presence in this country of 14 million handicapped men, potential candidates for specific industrial activities. Added to this number is an average of 75,000 men per month being discharged from our armed forces as unfit for active service.

The demand for this reservoir of manpower has given valuable experience in the studied placement of the handicapped in our factories. This placement experience will indeed be valuable because of the determination of industry to find a job for any willing, handicapped veteran of this war.

Finding suitable work for the injured man has impelled a thorough inventory of jobs, a job analysis, and what is known as a job breakdown in our many industries. The purpose of the analysis is to determine the essential abilities to perform the job. The job breakdown is to assign certain parts of a job to a man with certain limitations.

I have frequently heard the statement that the industrial medical department should have a group of jobs under its control to which might be sent the recently injured or handicapped employee. I do not agree. It is difficult to keep a job open or waiting for a man to appear with a certain handicap, and I judge it much more feasible to acquaint the personnel man with the ability of the injured man and let him consider his data on the group of tasks available by the "breakdown" or job analysis method.

But there is much more than mere mechanical adaptation; there is, indeed, an imperative need for the occupational reorientation of the injured worker. Often an adequate period of training will inevitably be required. Special teaching skills will be necessary on the part of those who will aid the injured worker in acquiring the habit patterns which will enable him to function effectively despite his new difficulties. For example, it is conceivable that a type of work which does not require a bimanual operation will not be properly performed by the one armed man until this man is taught a motor pattern in which there will exist no need for any secondary function of the missing member. Another example, encroaching upon this program, is that of the worker who might be assigned a task capable of accomplishment with the use of one eye. In such a case, it must be remembered that this man must be taught to function without possessing the faculty of depth perception, and for this a period of appropriate training may be required. It would be superfluous to add that there are factors of safety which are subsidiary to the skills a given job requires but which must be adequately taught. For example, the one-armed worker is accustomed to certain movements in the environment of his work which must now be changed and which must now involve certain compensatory factors in order to enable this man to work safely as well as effectively.

I shall not in this paper, attempt a discussion of the many psychological factors which play a major part in job adjustment, social adjustment, and domestic adjustment. I maintain that these factors are both relevant to the problem and of unquestionable importance, inasmuch as vocational efficiency cannot be considered apart from them. We shall abstain from any detailed discussion of them, however, since this is the assignment of other speakers. I have mentioned them in passing only to emphasize their significance.

It is amazing how many jobs may be done efficiently by a man who has lost several fingers or a hand or a foot. The following are jobs recommended for the following handicaps:

A. Loss of fingers or hand.
1. Crane operator
2. Mechanical tester
3. Tool room attendant, material handler
4. Film polisher
5. Sandblaster
6. Tool inspector
7. Grinder
8. Milling machine operator
9. Arc welder
10. Boring mill operator
11. Drill press operator
12. Planer
13. Slotter operator
14. Turret lathe
15. Annealer
16. Structural fitter
17. Layout
18. Hydraulic press operator
19. Gear lathe operator
20. Helper
21. Grinder—tool
22. Brakeman
23. Dispatcher
24. Painter
25. Shipping checker
26. Boiler operator
27. Bricklayer
28. Track repairman
29. Emery wheel driver

B. Loss of leg or foot.
1. Assembler
2. Filer
3. Polisher
4. Grinder
5. Milling machine operator
6. Layout
7. Babbiter
8. Inspector
9. Tool maker
10. Engine lathe operator
11. Checker
12. Dispatcher
13. Fitter
14. Tool repairman
15. Planer operator
16. Brakeman
17. Boiler operator
18. Truck driver
19. Mill operator
20. Shaper operator
21. Garage

When an employee in our Westinghouse Company receives an injury causing a handicap, we naturally give immediate care to the injury and shock. As soon as the patient can travel in comfort, we encourage the idea of an early return to duty. This will increase production; it will stop compensation, and, more important, it will remove the patient's despondence and point him toward a quicker, complete recovery. I will cite an illustration:

Anne K., age 28, working on a punch press. Lost three fingers of one hand and two fingers from the other hand in a moment of carelessness. This girl was hospitalized but very soon became nervous and developed a progressive feeling of inferiority and helplessness. She felt the company was to blame for her condition and considered means of suicide. Instead of sympathy, Anne was given stimulating encouragement. She was taken out in the shop to witness many operations, and was pointed to one activity where careful inspection was essential. She soon learned the details of the job, and today is pleased to be doing important work in an adequate manner and earning a higher rate than her former job paid.

In placing the handicapped employee, there are many who do not respond with the final enthusiasm which Anne demonstrates. There is a percentage of handicapped employees who feel they have a right to a living at the company's expense. Many feel they may almost be above the foreman's direction, their one responsibility to report regularly and on time and do little work to earn their pay. These men must be taught they will not be treated unfairly but will be expected to produce effectively, in competition with other men, at work they are fitted to do. To implant the knowledge in the handicapped man's mind that he will be self sustaining and fairly earning his living makes him a happier individual, and frequently he does his work more conscientiously than the physically sound man.

The suitable fitting of a handicapped man to a new job will often require a job breakdown, and I feel that labor will gladly cooperate and, in many instances, seniority will in part be given secondary consideration in the shifting of men from one job to another.

Quite a common injury in industry is a broken toe or toes and a broken metatarsal bone. We have found there are many broken toes that can be splinted in such fashion that the man may return to work the following day. At first the average man is surprised that he may be allowed to work when one or two toes are broken, but soon discovers that with cautious walking he has little distress; and we have found such toes to heal almost as readily as when the man is sent home and remains there with crutches until the fracture is healed.

The man with the simple metatarsal fracture is sent home from three to five days to permit swelling and tenderness to disappear. A wooden cleat is nailed at an angle across this man's shoe, which keeps his weight off the fractured bone and permits him to return to work, and he is pleased to experience very little inconvenience until the fracture has had time to knit. These men are satisfied when they lose little time from work and continue earning their regular pay.

The employee who needs an occlusive dressing over his eye is sent home until it is safe to remove the dressing. This will average three days for the usual imbedded foreign body. The injured eye will become more irritated if the man is active.

We recognize that improved instructions and more persistent observation by our safety men are producing an increasingly better percentage of work and less lost time among our working men.

There are many sprained backs in industry, but there are few of this number whose injury is so severe that it will not respond satisfactorily with the application of 30 minutes of heat each day, a light massage,

supportive adhesive strapping, and the advice to do no strenuous work for a number of days. We are satisfied to return an injured man to duty if he can do more than 50% of his regular work and not aggravate his injury.

In returning a veteran discharged because of disabilities to industrial work, the veteran counselor and the medical examiner consider the applicant's file. This will show the man's pre-service record with the company, his service training, his hospital record before discharge, which will be obtained from the U. S. Employment Service interviewers in the service hospitals, and, finally, the record of the industrial examiner. The personnel department will then be advised of the man's ability to work and, when placed, this man will be contacted periodically to see if and when further change is advisable, or if he has received adequate training to do his work with pleasure and satisfaction.

It would be in error to conceive the rehabilitation of the injured worker as a measure to meet the trying problems of the era of adjustment of the immediate postwar period. To be sure, physical handicaps are born of conflict. Millions of men will carry throughout their lives the scars and the disabilities of battle. But long after we pass the present emergency of manpower shortage, and long after the bitter memories of war become academic, there will remain the problem of countless thousands who will suffer a variety of handicaps as a result of the ordinary hazards of living. These men in the past have not been given the fullest opportunity of being gainfully employed. Consequently, the work of rehabilitation is not a temporary problem; it will remain with us as a permanent obligation. It is an obligation which cannot be shirked. It has been said that the working man makes wealth. We may go beyond this tenet and say that the working man is the indispensable link in the world's economic structure. Therefore, the 56,000,000 Americans who will need jobs after this war is won must be put to work and kept at work. They must work not only in terms of their abilities but also in terms of their handicaps, each according to his highest potentialities. If we achieve this ideal, we contribute greatly to the preservation of a stable economy, and we may derive from that fact the satisfaction that we shall be playing an important part in the rebuilding of the happier world for which the present sacrifices are being made.

Discussion

DR. HAROLD A. VONACHEN (Peoria, Illinois): I am particularly interested in the part of DR. GRAY'S paper regarding the physically handicapped. We at Caterpillar employ at the present time over a thousand handicapped people. These are individuals who actually have loss of members, or are blind, deaf, or recovered from tuberculosis and heart disease. It is important to stress the fact that if you are going to have a "handicapped" program, it isn't the doctor alone or the personnel man alone —it must teamwork between personnel, safety, training, medical, and, most important of all, supervision. After all, we, as doctors, see these men for only a very short time, and the supervisors must be educated in their handling. That is going to be particularly true of the boys who are returning from the armed forces—those particular types whom I won't call psychiatric cases, because I think that term is being very grossly over-emphasized. They are simply boys who have to readjust themselves into civilian life. You can't take boys and teach them to kill and be killed over a period of a year or two, and then expect them to come back and fit in perfectly to civilian life the first day they return. Because they don't react the same as they did before, they are thought to be psychiatric cases. They are not. They are simply boys who have to readjust themselves to a normal way of living. I believe that supervision in industry is going to be one of the most important factors in whether this readjustment is successful. If the program of hiring handicapped people and the returned boys is successful, it will depend upon how well we, as doctors, educate supervision in the handling of these cases. I think this is an important point, and that it should be very, very definitely emphasized.

Defective Vision in Industry

B. Y. ALVIS, M.D.,
St. Louis, Missouri

THE ANSWER to the question "who can work?" as it applies to persons with defective vision depends somewhat on the viewpoint of the person making the selection. If he is thinking only in terms of highest efficiency, of increasing production, of turning out the most goods in the shortest time, his standards of visual efficiency must be high. If, on the other hand, he has in mind not only a reasonable output of goods but also the human problem of providing the handicapped individual with the opportunity of earning a living and maintaining his sense of self respect, he will endeavor to place such persons where they can work to the limit of their aggregate talents without any arbitrary restrictions other than those necessary to the safety of the personnel and material resources of the plant. Other assets, such as intelligence, determination, manual dexterity, experience, etc., can equalize certain deficiencies in vision.

Kuhn and Tiffin, in their research on vision in industry, have shown very clearly that industrial efficiency of groups of workers has a definite relation to the adequacy of their vision for the jobs they are to do.

On the other hand we know that there are many workers doing satisfactory or even superior jobs at work for which their visual equipment theoretically and actually is not ideal. The other factors of superior intelligence and persistence, with opportunity for experience and training, enable them to compensate or more than compensate for their visual handicap.

On this point I quote: "While we know that workers can be trained to utilize the skills they possess, we also know that to lack totally any one or more of the basic elements of such skills as are needed would be a permanent handicap no matter how much training was given.

"The individual with normal eyes is adequately equipped for almost all jobs—all except those at extremely close range. The individual who is not normal —who has a high minus in only one eye, who has never had fusion, who has one amblyopic eye, who is color deficient, can also do *almost* all jobs. There are some, though, that he cannot do skillfully."

I, therefore, start with the premise that the individual with a visual handicap should be given an opportunity to develop his skills to the limit of his total endowments, his mental and physical aptitudes and character assets that may compensate for some visual deficiency. We must, however, know the shortcomings of the workers so that they may not be assigned tasks where the particular faculty they do not possess is essential to the safety and reasonable efficiency of the job. For example, the operator of a large crane must have excellent visual acuity and stereopsis. Danger to life and property would rise from faulty vision here. Also, an inspector whose task is the detection of small defects by visual observation cannot by any other faculty make up for such lack of acuity of sight.

For the purpose of this discussion, which is to consider what work one can do whose vision is less than the average normal, it will be useful to think of this "art of seeing" as a composite of a number of visual attributes. These components are acuity, fusion and stereopsis, muscle balance and coordination, color appreciation, near vision and range of accommodation for near, visual field or breadth of vision. These terms are used here in the significance thus briefly stated:

Visual acuity, usually stated in terms of the Snellen test letters seen at 20 feet—20/20 being average normal—is the ability for detailed discrimination.

Fusion is the faculty of joining the images of the two eyes to form a single mental concept. It is the basis of stereopsis or depth perception.

Muscle balance and coordination refer to the delicate and complicated action of the 12 external eye muscles in keeping the two eyes acting together. Failure of this function results in double vision in some or all directions of gaze if fusion ability is present, and this leads to confusion.

Color appreciation deficiency, often called color blindness, exists to greater or less degree in some 5% of the male population. It is rarely total. Most common is weakness in discrimination of reds and greens. For most work it is not essential.

Visual efficiency for near depends on the inherent visual acuity of the eyes and the ability to focus the eyes accurately at the desired near point. This in the normal eye entails a change in the focal length of the eye called accommodation. The range of accommodation in youth is practically unlimited, covering all points from a few inches to infinity. This power diminishes with age, so that the average normal person 45 years old cannot focus on points at ordinary reading or working distances, requiring glasses for near work.

The normal breadth of field for two eyes is a full half circle plus, about 190°. For one eye the field is 155°, being limited by the nose.

It is important that a record be made of each employee's ability in all of these components of vision for two purposes: first, to direct their job placement; second, as a matter of record in case claims arise following accidental injury. These tests can be made by trained non-professional technicians using modern instruments, quickly and with satisfactory accuracy.

Let us consider some of the deficiency states as they are likely to be found:

First: The person with one normal eye, having vision of 20/30 or better and with one sub-normal in acuity—20/50 to 20/200—possessing fusion and full fields. If this condition is of long standing the actual over-all seeing ability of such a person may be perfectly satisfactory for all except certain most exacting jobs.

If the lowered vision of the poorer eye is the result of recent events, as disease or injury, the handicap may be great, and care must be exercised in assigning work less exacting and without hazards that demand good visual efficiency.

Second: Consider persons with one amblyopic eye but no fusion. This state has usually existed since birth and such defects are well compensated by experience. The field is usually full. Such persons can do almost all kinds of work satisfactorily, except those requiring most accurate depth perception.

Third: Consider the person with one blind eye. Recent loss of one of a well coordinated pair of good eyes is a great handicap and impairs judgment of distance and position. Such a one may be awkward in handling and placing tools, in avoiding hazards on the blind side, and in walking or climbing. Time and experience will usually restore most of the ability in general visual performance, but one should be permitted to develop this monocular skill where there is no hazard to himself or others. The person with only one seeing eye learns eventually to make it serve well almost every human purpose.

The recently enacted laws making one-eyed persons employable under workmen's compensation, restores to industry many efficient workmen as well as giving these workers opportunity to live and work as they deserve to do—up to the limit of their capacity for service.

Fourth: We think of persons having low visual acuity in both eyes, such as 20/50 to 20/100.

Here again the time and manner of acquiring this lowered central vision has a bearing on what such a person can do. If the state is congenital the skill developed by the lifelong dependence on such vision may result in a high degree of usefulness. Here placement should be determined by what ability the individual can demonstrate. Some such persons can do fairly exacting work, both mechanical and clerical. I have known some drivers of heavy trucks, with satisfactory safety records, having such eyes. This is, of course, not a recommended job for such individuals, but shows what experience and careful use of poor equipment may enable one to do.

If the poor visual acuity is more recently acquired by one accustomed to good sight the handicap is much greater and the work that can be done correspondingly more limited. Individual training and instruction is required before any but simpler jobs can be undertaken.

Aphakia, i.e., the state of eye that has lost the crystalline lens, as after removal of cataract, requires special consideration. If the fellow eye is still normal such a person is in the class of those having one good and one poor eye and no fusion.

If the worker has to depend on the aphakic eye, his ability is limited, especially at first. The working or effective field is narrowed. The ability to judge distance is impaired and range of near vision is very critical, i.e., there is no flexibility or adjustability of focal distance. Two aphakic eyes are better than one.

The question here resolves itself into a problem of each individual's ability to overcome a definite visual handicap.

The muscle functions have a bearing that is not easy to determine. Many persons with considerable degrees of esophoria or exophoria are not handicapped at all in any ordinary type of work. Weakness of convergence is liable to result in fatigue in near work.

The strabismic or cross-eyed worker usually is in the class of those with one good eye and one poor eye with no fusion. The field is not limited by this condition per se, and, being a lifelong state, is usually compensated for by experience.

Paralysis of one or more ocular muscles is a different story. If fusion existed before the paralysis occurred a disabling diplopia or double vision results that makes it impossible to use the eyes together and produces great confusion. Often it is necessary to cover one eye. Time and experience gradually overcome the confusion, but the state remains that of monocular vision.

The question of glasses for workers is worthy of special consideration. I will say only that the glass must be fitted not only to the eye but also to the particular job that eye has to do.

Visual deficiences are important and warrant careful consideration in employing and placing workers, but they should be taken only in their proper proportion. The determining factor must be over-all ability

of the man for the job, as determined by his aggregate endowments.

Discussion

DR. ROY MASON (St. Louis): I have been interested in the industrial end of ophthalmology for a good many years, and have noted with interest the progress made in industrial problems, and the changes in the compensation laws to take care of eye injuries and defects. The states now are taking care of defects that were never handled before.

About 15 years ago industrial ophthamology was mostly a matter of protective ophthamology. It was the furnishing of safety goggles and safety devices, and then taking care of the injuries that occurred. Now, besides being protective, it is protective and corrective. In other words, a well organized plant knows that to have efficient workmen they have to possess efficient vision, and they now have means of finding out just what these men need for their different occupations. I think this should be under the over-all supervision of a trained ophthalmologist, but the optometrists and the trained helpers can do the refractions that would be simply impossible for the oculist to handle.

I was interested in DR. ALVIS' discussion on vision. Twenty-twenty vision is an ideal thing to have. It is something we hardly ever get in a great group of workers. We know that more folks have 20/20 vision when they are young than when they get to be 40, 50 and 60. However, a 20/30 vision in an older employee makes, perhaps, a finer and better individual than the man with 20/20 who has an unstable, nervous system, comes to work after lack of sleep, and is not reliable. In other words, vision is not all that makes an efficient workman. For instance, a normal vision in a man of 60 isn't always 20/20. A man's lenses get a little harder and he doesn't see quite so well, and 20/30 probably is about normal for a man of 60. Still, if he has a normal life, he is a very efficient individual.

From my own experience it seems to me that more stress should be put on the recording of defects when these men go to work. In these times we are simply loaded down with people making claims for defects that we know never occurred in their course of employment. I think that greater stress should be laid by industrial firms on the defects and vision records. If you have a good record of those it will save time and trouble and money.

Defective Hearing in Industry

H. N. GLICK, M.D.,
St. Louis, Missouri

IMPAIRMENT of hearing, as you all know, is a symptom of ear disease which results from pathology in the external, middle or inner ear. When due to local causes in the outer ear, it is usually of short duration and can be easily remedied. Temporary disorders of hearing, resulting from such conditions as foreign bodies and accumulated wax in the ears, eczemas of the canal, fungus and furuncular infections, swellings of the soft parts due to inflammatory reactions from those traumatic injuries produced by cuts, blows, tears and contusions, or from lesions of chemical and thermal agents, seldom offer any difficulty in reaching a decision as to who can work. Their importance does not, in any way, depend on any hearing loss which is usually insignificant but more so on the severity and extent of an infection or injury. Very little or no time loss from work is the general rule, and you will undoubtedly agree that the lesions in themselves constitute no barrier against accepting employment, and do not interfere in any serious way with staying on the job.

Let us consider what takes place when the middle ear apparatus is involved as a result of infection or injury in one or both ears. We find from clinical experience that this division of the ear, which is chiefly concerned with the conduction or transmission of sound to the end organ in the cochlea, contributes to the largest number of cases of defective hearing. In this region a hearing loss may be found which is of slight degree and often temporary, or there may be a tendency perhaps toward chronicity and progression with permanent damage. In the former, little or no disability follows, whereas in the latter a handicap is prone to develop which, however, under proper handling, should keep the worker on the same job or, when moved to another position for definite reasons, then his efficiency or production would hardly be altered. The average case of acute otitis media with or without suppuration runs a more or less definite course. In such cases, with or without perforation of the tympanic membrane, the degree of the disturbance of hearing is usually slight and is generally no more disabling than the common head cold, from which it frequently originates. Complications from extensions of middle ear disease, such as surgical mastoiditis, sinus thrombophlebitis or thrombosis and intracranial lesions, are obviously more disabling from time loss than from partial or moderate lowering of hearing acuity. With the recovery from the tympanic and mastoid affection, the individual returns to his work in from three to six weeks and can carry on as before. In exceptional cases, however, some minor modifications or adjustments as to when and where to work may be necessary.

One should also add to cases of middle ear disease causing disturbances of hearing, those lesions caused by head injuries and complicated with or without fracture of the tympanic cavity or mastoid process. After an early examination in these cases, and if no serious symptom or immediate danger is present, the hearing damage may or may not be severe but its involvement will depend upon the subsidence of inflammatory reactions and healing of the injury.

Now let us review the inner ear mechanism when it is affected by disease and learn how it contributes toward defective hearing. This portion of the ear contains the organ of Corti, the end-organ of hearing in the turns of the cochlea, and it is concerned with perception of sound. Hence any abnormality of hearing arising in the inner ear is known as perception or nerve deafness. It is apparent also that slight injuries may lead to permanent disturbances of hearing and be very damaging to its delicate structures, while severe injuries may recover without much hearing impairment. Ear accidents such as occur with some head injuries whether accompanied with, or without, skull fracture, repeated or continued loud noises that are present in some occupations, reports of gunfire and detonations, concussions as from explosions, blows on the ear, action of intense sounds from whistles, the reaction from certain drugs and chemicals, and mechanical agents causing sudden changes in air pressure, affect the inner ear and may be responsible in the majority of cases for a profound and permanent deafness. At times the hearing defect that has been brought about in these cases is associated with tinnitus and vertigo. It is the latter symptoms that interfere with the efficiency of the worker more than his deafness, and prevent him from engaging in any kind of work.

An extension of infection from another part of the ear as from the tympanum, mastoid and cranial cavity, may also affect the inner ear with varying degrees of hearing damage and be responsible for extreme and often permanent loss of auditory func-

tion. Fortunately, the numbers of inner ear cases are not as frequent as those from the middle ear tract. Finally, one must not overlook the fact that systemic causes, as from blood stream involvement, endocrine disturbances, remote foci of infections, some central nervous system disorders, general and infectious diseases, also account for trouble in the inner ear which at times causes severe and lasting deafness and disability.

Thus far we have briefly reviewed under what conditions deafness may develop and under what circumstances employees with defective ear conditions can engage in work to maintain the highest rate of efficiency. I realize that in industry the medical man, though justly concerned with deafness, may not be interested in the kind or type of deafness as much as he is in the degree of hearing loss. In other words, he prefers to know how bad is the hearing defect or how much of a hearing loss is present, rather than what kind of impaired function or where the lesion is located. A knowledge of the latter, though a matter of importance from a diagnostic standpoint, is of little help in a practical way when looking for an answer to the question "Who can work?"

One may encounter all kinds of deaf people in industry. Some have a slight, moderate or marked hearing defect. Apparently, all are performing their duties well. Not so long ago when a person with defective hearing applied for employment in any occupation or developed some deafness in industry, he was frequently turned down or dismissed, but times and methods have changed, and we find that a large number of severe hard-of-hearing individuals are holding their own with the normal hearing person. It is true, from recent experiences, that some severely deafened people may do their work on certain jobs as good as or better than normal hearing people, but also on some special jobs, where good hearing is absolutely essential, they cannot be expected to do as well. At this point, perhaps, some information relative to the recognition of the degree of deafness may be of interest. This is usually based on the ability for hearing speech of ordinary conversation. A slight degree of hearing loss is often not appreciated or noticed by the individual who possesses it. He usually misses out on faint whispers and can get along, sensing no abnormality or defect.

When approximately more than one-fifth of serviceable hearing is lost, there is a realization that some moderate impairment of hearing function is present, since soft or lowered conversation or poor articulation is not understood. If nearly half or more of the hearing acuity is lacking, the degree of deafness is severe enough to recommend such aids to hearing as lip reading and electrical hearing devices, because loud conversation is often poorly understood and heavy noises not appreciated. When two-thirds or more of a hearing loss is apparent, then the deafness is profound and may prove a more difficult problem in rehabilitation, since loud and shouted words are not heard and, with no knowledge of lip reading, a hearing aid is of doubtful or no benefit.

In conclusion, if we look at the problem of the deaf person today, we find that the hard of hearing, as shown from repeated experiences of various industrial plants, are able to hold their own. With the assistance of lip reading and hearing aids, unemployment among the acoustically handicapped is already past history. Naturally, they cannot expect and should avoid occupations requiring good hearing. Many employers are already realizing that the hard of hearing citizen can maintain equal efficiency with hearing workers. In some states, the placing of the deaf employee on productive jobs is far in the lead of others. It is fast becoming real knowledge that they suffer very little occupational handicap, providing they take advantage of electrical aids and lip reading. After extensive and accurate surveys have been made by various agencies concerned in this problem of the deaf worker, and careful consideration given to this issue, no doubt was left regarding the hard of hearing even excelling at times in efficiency over that of the hearing worker.

Pulmonary Pathology in Industry

R. C. KIMBALL, M.D.,
Consolidated Edison Company,
New York

IT IS THE privilege and obligation of every adult individual to earn his living. It is also the obligation of every employer to use manpower to its fullest extent. Therefore, the physician has a double duty: first, to diagnose the illness of the sick employee; and, second, to institute or have instituted adequate treatment to return the employee to his job as quickly as possible.

When this is done the employee profits by earning a living for himself and his family, and the employer receives the benefit of the employee's labors, resulting in a greater gain for both the employee and the employer as well as reducing the public charitable burden.

Lung conditions have the bad habit of running a long period of lost time, which increases the financial burden to the family, as well as society's job of caring for the disabled employee and his family through taxation and donations.

Chief among the lung conditions is tuberculosis. I am excluding acute illnesses, such as the common cold, bronchitis, pneumonia, which, even though they take a great toll in lost time, do not as a rule cause long periods of lost time. However, always keep in mind that they may be the forerunner of a more serious condition.

The average amount of time lost from work per case because of tuberculosis is about 400 days. Hence it is most important for the industrial physician to recognize this disease as early as possible, and to institute adequate care.

This is accomplished, first, by pre-placement examination; second, by periodic examination, especially in the lung-hazardous occupations; and, third, by careful physical check-up of all respiratory disease cases which are ill longer than two weeks.

These examinations should include x-ray and sputum examinations, and, if necessary, gastric lavage for tubercle bacilli and cultures. After examination has been completed and the case established as active, then the industrial physician must make adequate provisions to institute treatment as soon as possible to insure the employee's return to work.

It is my belief that no active case of tuberculosis should be treated or supervised in the patient's own home, but rather he should be institutionalized. Special attention should be paid to the employee's mental status throughout his institutional period, which should also include the working out of some means of care for his family's financial aid or the employee may become discouraged, lose his morale, or turn against society—and his employer.

No employee should be allowed to return to work until he has become arrested. This should be confirmed by repeated x-rays, together with negative sputum, for at least six months. After the employee has returned to work it is the duty of the industrial physician to

select and recommend the work hours and the type of work the employee may do.

The physician must not stop there, but he must follow the case for several years by repeated periodic examinations, including x-ray, sputum analysis, or gastric lavage. If this is done, exacerbations or secondary breakdowns will be reduced to a minimum.

Second in importance, not only as a cause of repeated lost time but also eventually as a cause of long periods of absence, even to disability, is bronchiectasis. Too often this is passed off by the physician as chronic bronchitis or asthmatic bronchitis until the employee gets to total disability. Here, careful study, including x-rays, sputum, lipiodol examination, should be done as soon as possible to establish a diagnosis.

After the diagnosis has been established, the next step should be to eliminate all foci of infection. Then, if the employee's condition permits, a lobectomy should be done. I know this sounds radical to some, but, radical or not, the employee should have the benefit of it, for, if he does not, it will only be a few years before he is totally disabled and incapable of sustaining himself or maintaining his family. When this happens we, as physicians, have not done our part.

Next in importance are the allergic lung conditions, such as hay-fever and asthma. Here, before relying on allergic treatment, two factors must be considered. First, the employee should be instructed to keep himself in the best of physical health, including the eradication of focal infection; and, second, the employee should be removed from contamination.

Following this, treatment should be instituted and continued the year around rather than seasonally.

Silicosis is not the dreaded hazard it once was thought to be, as now the political heat is no longer focused on it. This disease has existed as long as mines and quarries have been worked, and only the secondary infected cases become serious problems. These cases are usually tubercular and should be treated as any other tuberculous case.

As industrial physicians our problem is that of prevention. Therefore, it is our duty, after study, to advise management of proper prophylactic measures. But we must not stop there. We should institute periodic follow-up examinations. The most important of these are the x-rays and sputum examinations.

Time does not permit the discussion of lung abscesses, empyema, or semi-chronic lung conditions. These cases can be usually kept at work, carefully segregated and followed up.

We as industrial physicians should, therefore, exert every effort to get the veteran upon his discharge to work as quickly as possible, and guide management in placing him in the type of work he can physically do, and follow him at intervals, thereby keeping him at work.

Discussion

DR. L. W. SPOLYAR (Indianapolis, Indiana): I would like to ask DR. KIMBALL what the policy of his company is with respect to individuals who have no evidence of tuberculosis, but whose x-rays show what looks like calcium deposits through the lungs.

DR. KIMBALL: With the miliary classical tuberculosis or the miliary calcified type x-ray where they show no evidence of any activity at all, I feel that those people can be employed providing they are not given any hazardous or dust-producing type of work. They should be followed up at periodic intervals. Of course, in employing them, they are put on a probationary period, subject to how they get along. Does that answer the question?

DR. SPOLYAR: No. What I am driving at is this: In Indiana we are seeing a lot of these people come in from the farms. They have no history of tuberculosis and you can't demonstrate anything. On physical examination you find nothing on the chest, but when you do take an x-ray it looks very much like simulated tuberculosis or silicosis or a miliary tuberculosis, calcium deposits spread throughout both sides of the lung.

DR. KIMBALL: I don't feel that those people should be stopped from their employment at all.

DR. M. N. NEWQUIST (New York): I am not a chest specialist, but I did come from the farm. We saw a number of farmers who have this very condition the doctor describes, and it was not tuberculosis, not miliary tuberculosis, but it was a fungus growth called aspergillosis. We must be on our guard for that. We have five or six people in our plants at the present time. It is not tuberculosis; it is aspergillosis, and they can go to work just as well as you and I. We have to watch these farmers who work in grain fields, rice fields, or any place exposed to fungus, and be on the lookout for aspergillosis as well as tuberculosis.

DR. SPOLYAR: How do you make a diagnosis?

DR. NEWQUIST: Most of the cases look like somebody picked up a handful of buckshot and threw it into the lung. When you see that sort of thing in a few cases, you will have a mental picture that will stay with you the rest of your life.

CHAIRMAN WITTMER: There is one question that DR. CARLISLE left for DR. SHAFER, and I think we would all be interested in knowing the answer.

May a person who has had a coronary thrombosis ever return to manual labor?

DR. M. M. SHAFER (Dayton, Ohio): I don't know the answer to that question. Personally, we don't put them back. I presume the question means hard manual labor, and I should say no. We do have many employees working in ordinary machinery, such as drill press and punch press work, and other types of work. I have returned them, after a study over periods of months, when the cardiologist has assured me that he can make out no further progressive changes in the coronary lesion that exists.

Three of those men whom I have followed through have died in the past year. One died when he was going to the funeral of the foreman, running to take a streetcar. He died on the streetcar. He violated one of the instructions we had given him; no extreme exertion at any time. He had worked for five years after his original coronary.

Another man died in the past month. He was a supervisor of a tool room. However, he did not die of his coronary. He recovered from that, returned to his ordinary supervisor capacity, and died fom a hypernephroma.

We had another man who died from an accidental cause; he had worked five years at a light job after returning from his coronary.

All three of those died in the past year. On the other hand, since receiving DR. CARLISLE'S original letter, we have had two men who had no symptoms whatsoever of cardiac conditions, one 52 and the other 46, and both of them died with their first attack. One died at the plant, and the other lived six hours after getting to the hospital.

So, I don't know how you can tell what they can do and what they cannot do. Neither of these men was on heavy work. Both were in a light type of skilled mechanic's work, one on a light drill press and the other on inspection. Both were on the second shift, and both attacks followed the eating of their evening meal. Whether eating hot dog sandwiches has anything to do with coronary attacks, I don't know, but both of them had that same food for their dinner. I think it had no particular part to play, but neither of them was doing anything particular at the time the coronary hit him.

Thus, whether the man can return to the primary job is a difficult question to answer, but we do put them back if they survive the original attack. We have many who died from other causes rather than coronary the second time.

I recall, a few years ago, employing a man from a competitive firm. He worked less than a week and dropped dead. It had been about six weeks since he had had the

coronary attack with this other firm. He gave no history whatever on the original examination; denied any illness. When I went to the other firm, they told me they had sent him home six weeks before with a coronary attack.

Of course, he violated the instructions of his family physician, and did not take the period of time off that he should have to give his heart a chance. A postmortem done on this individual showed the old lesion attempting to heal but of recent origin with the superimposed secondary coronary on it. His work was drafting, which certainly wasn't strenuous, but nevertheless the man should have been in bed during the six-weeks' period rather than securing another job and violating the physician's instructions. I have no way of telling when a man is going to get a coronary.

Deserted Diabetics—Industry's Orphans

R. A. NUSSBAUM, M.D.,
St. Louis, Missouri

THE consideration of diabetes by the industrial physician presents a problem as confusing as it is complex.

The importance of the problem is well recognized by all of us who must deal with routine disabilities among the employed, and who so often are beset with the complications arising in those of our patients discovered to be diabetic.

Too frequently does a simple rash, a mild pruritis, an innocent-appearing ulceration, a traumatized toe, a neuritis, etc.—all minor enough illnesses in themselves—suddenly assume gargantuan proportions when, concomitantly, we discover a glycosuria and are able, then, to demonstrate the metabolic factor in the etiology.

For our experience has warned us of the difficulties and delays involved in therapy and of the poor prognosis expected whenever diabetics are treated; and how with fear and trepidation we undertake surgery in the face of hyperglycemia.

It is because of these familiar hazards that we have become biased in our pre-employment examinations and with undue prejudice, I believe, categorically disqualify any prospective employee who shows a persistant glycosuria.

The implications of such a rigid standard are far-reaching indeed. Today, especially, with the demand for manpower at a new high and industry working at a record pace, it becomes the physician's obligation to conserve manpower at every turn and to exercise his skill and judgment in his selections and appointments. Besides, the economic potential of the individual, himself, should be of concern to us as physicians.

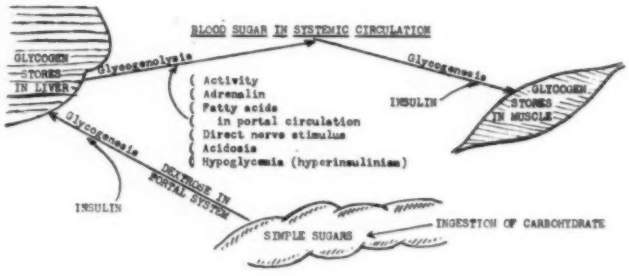
In order to assume such a liberal philosophy toward diabetes and in order, on the other hand, to remain justly critical, I should like to summarize, in brief, our concept of the problem.

The accepted definition of diabetes mellitis is, "a disease of metabolism in which the normal utilization of carbohydrates is impaired through the lack of the internal secretion of the pancreas."

To me, this is as erroneous as stating that tetany is a disease of metabolism in which the normal utilization of calcium is impaired through the lack of the internal secretion of the parathyroid glands. True, tetany results when this deficiency exists. But the great majority of tetanic convulsions take place in the presence of normal parathyroids; from alkalosis of one cause or another, from vitamin D deficiency, from long-standing diarrheas, etc.

So, as tetany is but a symptom-complex, diabetes, we feel, should be considered in the same light. It can and does occur as a result of insufficient insulin secretion; but, on the other hand, hyperglycemia occurs more frequently in the presence of normal pancreas with normal activity of the Islands of Langerhans.

In order to clarify this the following chart depicting the cycle of carbohydrate metabolism is presented:



Ingestion of carbohydrate (in addition, about 60% of protein and 10% of fat) is followed by a conversion in the intestine into simple sugars. These are absorbed into the portal circulation as dextrose. Dextrose either passes through the liver into the systemic circulation, or is stored in the liver as glycogen by the process of glycogenesis. It is here that insulin plays its important role, as glycogenesis depends upon the action of insulin. This process obtains, too, in the conversion of dextrose from systemic blood into liver glycogen, or into muscle glycogen, also by the action of insulin.

The level of blood sugar in the systemic circulation is, therefore, determined by a balance between the forces of glycogenesis and glycogenolysis, as the latter process yields dextrose *from* liver and muscle glycogen stores as freely as these stores are supplied.

There are many physiological processes that initiate and accelerate glycogenolysis. Activity, calling for additional supply of muscle glycogen, draws glycogen reserves from the liver, tending to raise blood sugar. The concomitant activity of insulin, by supplying this need in the muscle, prevents the blood sugar rise. On the other hand, factors are predominant that may cause glycogenesis to such an extent that, despite the presence of normal amounts of insulin, a rise in systemic blood sugar results.

Endocrine secretions may play a part through adrenalin or pituitary hyperfunction, accelerating glycogenolysis.

Direct nerve stimulus to the intrinsic nerve supply of the liver itself has been shown to augment glycogen breakdown, raising the blood sugar.

Presence of excessive fatty acids in the portal circulation has also been proved a stimulus to glycogenesis. It is on this basis we feel that diets high in fat are decidedly diabetogenic, and consequently limit the fat intake to a minimum. In the same regard, the ability of the liver to store glycogen is inversely proportional to the amount of fat deposition in that organ; and, as a corollary to this, fat deposits there only at the expense of a diminished glycogen supply. Thus, in order to replenish this supply, diets high in carbohydrates are ordered. As the liver's glycogen stores are replenished, its potential for glycogenesis increases and additional insulin is found unnecessary to lower the blood sugar.

Acidosis, due to the toxic effects on the liver of the intermediary products of fat metabolism, increases glycogenolysis and at the same time inhibits glycogenesis. Thus it is one of the most serious factors in augmenting hyperglycemia.

Too infrequently is it recognized that hypoglycemia in itself is instrumental in raising blood sugar levels. It can easily be demonstrated, even in a normal indi-

vidual, how hypoglycemia following administration of insulin results in a subsequent elevation of blood sugar above the normal fasting level. In an individual whose carbohydrate metabolism is unstable and whose blood sugar is vacillating, these rebounds from hyperinsulin reactions are greatly exaggerated and only add to the complexity of regulating the diabetic state.

Thus there are many factors that influence the level of the blood sugar. Indeed, a number of these factors may be diabetogenic in the presence of normally-acting Islands of Langerhans.

The most important of these—the factor most frequently deficient—is the liver; and we have shown repeatedly in an ever-growing series of cases how, with high carbohydrate-low fat diet alone we can re-establish the liver's potential for storing glucose. And with this enhanced glycogenesis there results a progressive lowering of the blood sugar, a reversion of the diabetic to the normal glucose-tolerance curve and a clinical disappearance of the diabetes—and this without recourse to insulin.

This conception of diabetes is, therefore, no mere theory but has been elaborated only on the basis of practical experience.

We feel very certain that diabetics in industry and those being considered for employment can be fairly evaluated only after complete investigation reveals the nature of their abnormal carbohydrate metabolism. Only then can the proper measures be instigated to correct the underlying defect and to reject relatively few individuals whose diabetes requires too rigid a dietary regime and too carefully calculated insulin doses to make employment safe.

The Non-Absorption of Mercuric Cyanide from Soap

WM. D. McNALLY, M.D.,
and GERALD FOSTVEDT, PH.D., M.D.,
Rush Medical College, Chicago

SOME doubt has been expressed as to the possible absorption of mercury through the skin from soap containing a mercuric cyanide with apparent attempt to improve its antiseptic value. The literature fails to reveal that any previous research had been conducted upon absorption through the skin of mercuric cyanide when used in soap. A considerable amount of information is given upon the absorption and elimination of mercury used in the treatment of syphilis. Lomholt[1] proved that the kidney is the main excretory organ for mercury, two thirds to five-sixths of the total amount being eliminated this way. The studies of Kolmer and Lucke[2] on the histologic changes produced experimentally by mercury, demonstrated that relatively short courses of mercury may produce perceptible kidney changes, and more pronounced kidney damage was seen in animals receiving more vigorous treatment by inunction, intramuscular or intravenous treatment. There are abundant references on the various disorders of the nervous system occurring among workers in mercury. Wright[3] makes the statement that eruptions following the use of mercury are not common, considering the widespread use of the drug, yet a review of the literature reveals the fact that the occasional dermatoses which do result from its use are almost as varied in their morphology as the eruptions which may occur after the use of arsphenamin. Almquist[4] states that a review of the American literature of the past 20 years reveals scarcely a mention of mercurial eruptions. This is surprising in view of the fact that possible cutaneous manifestations from this drug parallel in part those of arsphenamin. Wilson[5] reported eruptions due to Hydrophen ointment. Lawrence and Strauss[6] reported a case showing a cutaneous sensitivity to potassium mercuric iodide. A solution of potassium mercuric iodide was applied to the skin but was not followed by alcohol. Three days later there was an erythema of the right cheek which gradually developed into a severe dermatitis in the right ear and surrounding skin, consisting of papules, and vesicles, with a crusty erythematous base. Sollmann, Cole, DeWolfe, Schreiber and Van Cleve[7] report the effect. Cutaneous eruptions were present in six of the patients who received inunctions with 50% ointments. Lowy[8] states that, following a method he used for mercurial inunctions for five years, he has never seen any cases of mercurial dermatitis.

A number of people used a mercuric-cyanide-containing soap for a period of from a few days to several months without showing any ill effects. One subject, E. L., used the soap daily for one year without the slightest irritation of the skin. An examination of a 24-hour specimen of urine failed to show the presence of mercury by the Reinsch test. Another subject, W. D., used the soap daily for one month without any evidence of irritation of the skin and the urine was negative for mercury. No rash had developed either on the human subjects or the experimental animals upon whom the soap was applied.

A dermatologist, to whom a generous supply of this soap was given, reported that two people out of 30 who had used it developed an erythema which cleared up rapidly upon discontinuance of the soap. No other untoward results, outside of this slight irritation, were noted. Since 1% of the people are allergic to something, it should be expected, if this soap were used upon a large number of people, that cases of some irritation would result.

The purpose of the animal experiment conducted, was to find whether or not the mercuric cyanide in the soap was absorbed in measureable quantities when applied to the skin of an animal and, later, whether absorption would occur when the dogs were immersed in a solution made from 1% of mercuric cyanide soap. Also, further, to determine whether such absorption was sufficient to cause pathological changes in internal organs or in the skin.

The soap was first applied to the clipped and shaved backs of four dogs, allowing one week's time for the skin to heal, as shaving caused irritation. Later, these four animals, plus two more, were clipped, not shaved, and the solution was applied daily for six days a week. The area of application was covered by wax paper, oil cloth and adhesive tape. The urine was recovered every other day and examined for the presence of mercury, and a histological study was made of the liver, kidneys, bowels and heart from four sacrificed animals.

Inasmuch as the application of the soap upon the skin of the dogs failed to show evidence of mercurial absorption, it was deemed necessary to try a more rigid test—that of immersing the animals in a soap solution. This solution consisted of 600 grams of soap dissolved in three liters of water and was of such consistency that upon cooling it would congeal. Hence, it was warmed to about 35° C before each dipping experiment.

EXPERIMENT: Bladder fistulas were produced in female dogs by the usual operative technique. Those which had fully recovered from the operation were immersed in the soap solution approximately every two weeks. Preparatory to immersing, the dogs were placed under anesthesia with an appropriate barbitur-

ate used intravenously. They were then dipped and allowed to remain in the soap solution for 15 minutes, then removed from the bath and wrapped in sheets, remaining saturated with the soap solution from two to three hours. Urine samples were collected before each experiment and again in 24 hours. This was done by the simple expedient of tying a funnel and test-tube underneath the bladder fistula and collecting the urine during a half-hour period. The blood picture of these animals was also observed.

Seven dogs were used during the course of these experiments. The condition of the first two dogs is not reported in the table as they were a preliminary experiment. These two dogs died from respiratory failure because of too long a period of immersion in the soap solution. Autopsy revealed no tissue damage —the dogs had been dipped three times in the mercury-containing soap solution. During the course of the subsequent experiments it was frequently necessary to give artificial respiration to the dogs since the immersion acted as a shock to the animals even under light anesthesia.

In Table I we have given the blood counts and the results of the Reinsch test upon the urine before and after dipping. The blood count was practically the same four months after the experiments were started as it was at the beginning. The red counts varied from 5,550,000 to 6,530,000. In the experiments on the dogs, where the soap was placed on the shaved area on the animals' backs, the Reinsch test was conducted on 500-cc. samples of urine with negative results.

REINSCH TEST: The Reinsch test is simple and can

TABLE I.

Dog No.	Description	Operated	Blood picture at beginning and end of experiment	Date Dipped	CC. Urine Collected before dipping	CC. Urine Collected 24 hours after dipping	Reinsch Test	Remarks
No. 1	Brown and white female wt. 22 lbs.	November 11, 1940	December 2, 1940 R.B.C. 6,530,000 W.B.C. 8,800 Neutrophiles 83% Lymphocytes 9% Monocytes 3% Basophiles 2% Eosinophiles 3%	December 2, 1940	40 cc.	20 cc.	Neg.	Dog died January 3, 1941, from an intercurrent infection and abscess near operation; Reinsch test of liver add kidneys was negative.
				December 19, 1940	50 cc.	45 cc.	Neg.	
No. 2	Brown female police dog, 28 lbs.	November 18, 1940	December 2, 1940 R.B.C. 6,250,000 W.B.C. 8,600 Neutrophiles 56% Lymphocytes36% Monocytes 6% Basophiles 2% Eosinophiles 0%	December 2, 1940	10 cc.	50 cc.	Neg.	This dog has lost 2 pounds; otherwise healthy.
				December 19, 1940	60 cc.	20 cc.	Neg.	
			March 18, 1941 Approximately the same as before.	January 14, 1941	20 cc.	30 cc.	Neg.	
				January 31, 1941	35 cc.	60 cc.	Neg.	
				February 14, 1941	20 cc.	50 cc.	Neg.	
				February 28, 1941	30 cc.	30 cc.	Neg.	
				March 18, 1941	60 cc.	40 cc.	Neg.	
No. 3	Brown and white female 12 lbs.	December 30, 1940	January 14, 1941 R.B.C. 6,000,000 W.B.C. 12,000 Neutrophiles 85% Lymphocytes12% Monocytes 2% Basophiles 1% Eosinophiles 0%	January 14, 1941	25 cc.	30 cc.	Neg.	This dog lost one pound during the experiment; otherwise healthy at present.
				January 31, 1941	40 cc.	40 cc.	Neg.	
			Marach 18, 1941 No significant change from January 14, 1941.	February 14, 1941	30 cc.	80 cc.	Neg.	
				February 28, 1941	40 cc.	40 cc.	Neg.	
				March 18, 1941	30 cc.	20 cc.	Neg.	
No. 4	Black female wt. 30 lbs.	January 24, 1941	January 31, 1941 R.B.C. 5,550,000 W.B.C. 10,000 Neutrophiles 55% Lymphocytes 35% Monocytes 9% Eosinophiles 1% Basophiles 0%	January 31, 1941	25 cc.	20 cc.	Neg.	This dog is healthy at present.
				February 14, 1941	40 cc.	40 cc.	Neg.	
			March 18, 1941 Blood count showed no changes.	February 28, 1941	30 cc.	20 cc.	Neg.	
				March 18, 1941	50 cc.	40 cc.	Neg.	Sacrificed for autopsy, April, 1941.
No. 5	Brown female wt. 40 lbs. An old dog.	January 21, 1941	R.B.C. 6,200,000 W.B.C. 30,000 Neutrophiles 80% Lymphocytes 15% Monocytes 3% Basophiles 2% Eosinophiles 0%	January 31, 1941	40 cc.	30 cc.	Neg.	This dog expired March 10, 1941, apparently of old age. The liver and kidneys were negative for Hg by the Reinsch test.
				February 14, 1941	30 cc.	30 cc.	Neg.	
				February 28, 1941	20 cc.	30 cc.	Neg.	

be run in any physician's office where gas is available. The test is performed by boiling a sample of the vomitus, urine, stool, or suspected food in a beaker or evaporating dish with a strip of copper foil, 1¼ inches long by ⅛ of an inch wide, and 25 cc. of chemically pure hydrochloric acid. If the material is solid, water must be added to liquefy the specimen under examination. In the case of urine, at least 500 cc. must be evaporated down to 75 cc.; usually about one ounce of solid material is sufficient. After boiling, the supernatant liquid is decanted, the foil washed with water, alcohol, and ether and placed in the long end of a prepared small glass tube.

This glass tube is made from a piece of tubing ⅜ inch by 6 inches. Capillary constriction is drawn so that the long portion of the tube is 3½ inches, the capillary about ¾ of an inch in length, and the short end of the tube is 1½ to 2 inches. The copper foil is placed in the long arm of the tube, and the capillary refrigerated by a strip of filter paper dipped in cold water.

The fingertip is held over the opening in the long portion of the tube and heat applied beneath the copper strip. Arsenic is deposited as octahedral crystals. Mercury is deposited as small silvery globules which can be easily seen under the low power of the microscope.

Where no globules were seen from a 100-cc. sample the mercury was considered negative. As the method of Stock[9] (digesting the urine with chlorine, precipitation as mercuric sulphide occluded by copper sulphide, and conversion to mercuric chloride by means of chlorine and by electrolysis collecting the mercury on a copper wire electrode and then proceeding as in the Reinsch test) failed to show mercury, we tried the shorter method of the Reinsch test on other samples. This test can be finished in one hour, whereas the other method requires three days to complete. In either method the recovery varies in known samples rarely being over 75%.

AUTOPSY FINDINGS: Grossly, the lungs, heart, kidney, liver and bowel appeared normal. *Microscopical Diagnosis:* No significant changes are noted in the lung or myocardium. *Kidney:* The lumina of the convoluted tubules contain pink staining material but definite red cells are not noted. The epithelium of these tubules is somewhat swollen and granular. No changes are noted in the glomeruli. These changes, while not normal, are not characteristic of mercurial poisoning, as the kidneys in mercurial poisoning usually show parenchymatous nephritis, necrosis and fatty degeneration of the epithelium, and may show casts in the tubules. These lesions are usually confined to the convoluted tubules.

As previously mentioned, the skin of the experimental dogs did not show any irritation either when the soap was applied in the form of a solution or when the dogs were dipped directly into the soap solution. These animals gained in weight steadily with the exception of a few days after the dipping process, which resulted in somewhat of a shock, and took several days for the animals to return to normal, after which time they gained as rapidly as the control dogs.

One dog (No. 1) was lost with distemper, another (No. 5), died of old age, and three were lost by dipping, the shock proving too great. Only the urine of the animals was examined for the presence of mercury, the feces were not. From this investigation we believe that it is safe to use mercuric cyanide soaps on human skin. From the chemical examination of the organs and urine of the animals, one could conclude that the mercuric cyanide from the soap was not absorbed in sufficient amounts to cause any damage, even in individuals who had used the soap daily for over a year. Further, from our experimental work upon the application of mercuric cyanide-containing soap to the backs of dogs and the dipping of dogs in this soap solution, we have come to the conclusion that the possibility of absorption and storage of mercury from this source can be disregarded. Since an erythema may occur in some people from the use of a very pure soap because of an individual hypersensitivity, if a rash is brought on from the use of a medicated soap, it would indicate that such person undoubtedly has a similar allergy.

The areas of skin treated in the first animals were comparatively small, which without a doubt would be open to criticism that absorption from such amount of skin was too small to draw any conclusions. However, by the use of the process of dipping the entire animal in the soap solution, such criticism can be eliminated. Three of the dogs which were operated upon and were dipped at intervals during a period of six months are still alive and very active.

Bibliography

1. LOMHOLT, S.: *Brit. J. Dermat.*, 32:353, 1920.
2. KOLMER, J. A., and LUCKE, B.: *Arch. Dermat. & Syph.*, 3:531, 1921.
3. WRIGHT, CARROLL S.: *Arch. Dermat. & Syph.*, 10:507-514, October, 1924.
4. ALMQUIST: *Arch. f. Dermat. u. Syph.*, 141:343, 1922; *Acta dermatoven.*, 3:106, 1922.
5. WILSON, DONALS J., M.D.: Nebraska S. M. J., 24:70-71, February, 1939.
6. LAWRENCE, JOHN, and STRAUSS, MAURICE J.: *Arch. Dermat. & Syph.*, 30:76-79, 1934.
7. SOLLMAN, TORALD, COLE, H. N., SCHREIBER, N. E., DEWOLFE, H. F., and VAN CLEVE, J. V.: *Arch. Dermat. & Syph.*, 32:242-247, Cleveland, August, 1935.
8. LOWY: *Arch. Dermat. & Syph.*, 25:1102, June, 1932, Newark, New Jersey.
9. STOCK, A., and LUX, H.: *Z. angew. Chem.*, 44:200-206, 1931; STOCK, NEUENSCHUANDER, N., and LEMMER: *Berichte der Deutschen Chem.*, 71:550-62, 1938.

Industrial Medicine and Surgery

—Proceedings of the 25th Annual Meeting of the Central States Society of Industrial Medicine and Surgery, May 16, 1944, Chicago—

Reported by
C. O. SAPPINGTON, M.D., Dr. P.H.

CHARACTERIZED by an unusual variety of subjects and the consideration of both old and new problems, the 25th Annual Meeting of the CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY considered in its morning session "The Relation of Malignancy to Trauma;" "The Back as an Industrial Problem;" "The Changing Panorama of Industrial Medical Requirements;" and "The Relation of Mouth Infection to Industrial Health."

The afternoon meeting was a combined session with the Surgical Section of the Illinois State Medical Society at its 104th Annual Meeting, and ran the gamut of war plant surgery, chest injury, internal and external fixation of fractures, low back problems.

Morning Session

DR. HARRY E. MOCK, in discussing "The Relation of Malignancy to Trauma," mentioned the great loss sustained by the medical and surgical professions in the passing of Ewing and Coley, who were arch enemies on this subject, but really friends.

A series of case reports were given to bring out the various points involved in the discussion of the subject.

Case I, briefly, was that of a tumor at the end of the femur in a boy of 19 (the diagnosis was sarcoma on histology and later was proved to be of the spindle type). The history showed that the subject fell against a machine and rotated his leg. An x-ray taken on the fourth day after the injury showed no fracture, dislocation, or evidence of any kind of pathology. Later there was tenderness and swelling about the joint. An x-ray taken two months after the injury showed a necrosis of the condyle

occupying a very small area. Later a Thomas splint was applied, and fluid was aspirated which was negative for tubercle bacilli.

Of a group of 16 clinicians in consultation, most thought that this was a simple osteitis and only one suggested biopsy. Within a period of another two weeks, on taking x-rays, there was evidence of increased necrosis with rarefaction and real bone destruction. At this time the biopsy showed chondrosarcoma and x-ray therapy was started. Eventually it was necessary to amputate near the hip. The lung x-ray was negative. The patient was told to report periodically and did report once and then disappeared for a long time. At present the patient has now reported 31 times and has entirely recovered 15 years after the injury.

Case II was that of a male 10 years of age presenting a swollen and tender left knee for a period of six weeks after being kicked by another boy. Within a short time pain had subsided and the local physician applied a cast 18 weeks after the date of the injury. X-ray was made about three months after the injury and examination was generally negative. A biopsy showed some friable tissue representing a subepithelial osteoblastic chondrosarcoma. Blood transfusions were done, and deep therapy was instituted. Eventually it was necessary to amputate below the hip. Apparently the patient was in good condition, but two months later began to cough, had bloody stools, and succumbed.

Case III was a young male who had continuously bumped a desk over a long period, and sustained a scab over his hip. He had had eczema for many years on the lower right leg and had had x-ray applied as a method of therapy for this condition over seven years. There was a healed scar over the right tibia from this treatment. Biopsy on the small ulcer located over the hip suggested fibrosarcoma. Six months later there was a recurrence which now indicated the presence of a single-celled sarcoma. Dissection was done and a plastic closure made. Later on there was a recurrence of the growth, when wide dissection was done and healing took place. The patient seemed to be getting along all right for a period of a year and then had a small growth on the cheek which indicated a fibrosarcoma. This was followed by infiltration of the lower lobe of the left lung, shortly after which death occurred, with metastases in the heart, lungs, and pleura, extensive in nature.

Case IV occurred after a burn of the foot and a resulting ulcerating area; a cauliflower growth was burned out on three occasions. Biopsy then showed the presence of a carcinoma. Amputation below the knee was necessary, and x-ray treatments were given. This case shows the importance of trauma superimposed on an old burned area.

Case V, briefly, occurred in a man who pushed hot castings into a furnace. He sustained a burn near the knee. This was before trauma occurred. Subsequently a basal cell carcinoma was shown to exist and amputation was done. This subject is still alive.

A common sense analysis of various experiences, both reported and unreported in this paper, was given as follows:

1. Individualize every case, and study every detail in a scientific manner.
2. When all of the medicolegal aspects of the cases are removed or submerged, the cases present very different angles.
3. A preponderance of evidence indicates a causal relationship, and per contra.
4. Laymen are frequently misled as to their beliefs, ideas, or statements.
5. Most insurance companies and corporations want the truth.
6. If trauma is relatively important in the etiology of malignant tumor, there would be many more cases of cancer, for example in war, and in other situations—but we have no proof.

Another common sense consideration shows that there is a predisposition in families and that there is an acquired predisposition because of certain physical factors and certain chemical effects. The principle of embryonal rests is well known, but only a small percentage of these develop to maturity.

The evidence further shows a predisposing condition of the cells—just what the inherent factor is, is not known, but it is probably a hormone.

Therefore we can conclude that malignant disease is inherent in certain individuals, and that the criminal cells of malignancy are insidious in their attack.

In closing, the following criteria were cited:

1. The authenticity of trauma should be proved.
2. The previous integrity of the tissue should be established.
3. The origin of the tumor should be at the point of injury.
4. There should be a reasonable time limit between the injury and the onset of the tumor.
5. There should be evidence of bridging signs.
6. There should be a positive diagnosis made.
7. Pre-existing tumors may be aggravated where the above are true.
8. The first four criteria, above, should be established if a relationship can exist.
9. There are a small number of cases where a causal relationship has been actually proved.

In discussing DR. MOCK'S presentation, DR. BOWMAN C. CROWELL stated that no one can speak with authority with respect to the relationship of a single trauma. No such evidence was presented by this speaker. Moreover there are no cases in the bone registry showing a causal relationship between trauma and malignancy. It was the belief of the discussant that the speaker had left the subject an open question.

In closing, DR. MOCK stated that only six times since 1930 had compensable cases been experienced. A case of a man still alive and well 15 years after a malignant tumor was cited. Finally, only a few cases have been shown to have a positive relationship.

DR. LEWIS M. OVERTON, in presenting the subject "The Back as an Industrial Problem," stated that the subject was of greater importance nowadays because of the present employment of elderly persons, women, and handicapped applicants.

A lantern slide demonstration considered the anatomy of the sacrum and the fifth lumbar vertebra, and demonstrated the weight-bearing line in profile. The normal angle of the sacrum to the weight-bearing line is 40° to 45°, and, when this is increased, difficulties arise.

Lantern slide x-ray films of congential and acquired anomalies were shown, as well as cases of arthritis.

An outline scheme for the employment of the physically handicapped was given, as well as an outline for the prevention of back injuries. Especial emphasis was made on placement, proper instruction, proper safety measures including guarding, checking of machines, instruction in correct lifting, and plant housekeeping.

Morning Session, May 16

THE Relation of Malignancy to Trauma," HARRY E. MOCK, Associate Professor of Surgery, Northwestern University, Senior Surgeon, St. Luke's Hospital, Chicago.

"The Back as an Industrial Problem," LEWIS M. OVERTON, Des Moines, Iowa, Member Board of Governors, CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY.

"The Changing Panorama of Industrial Medical Requirements," CARL M. PETERSON, Secretary, Council on Industrial Health, American Medical Association, Chicago.

"The Relation of Mouth Infection to Industrial Health: A Mouth Health Program for Industry," EARLE H. THOMAS, M.D., D.D.S., LL.B., Past-President American and Chicago Societies of Oral Surgeons; Former Assistant Professor of Oral Surgery, Chicago College of Dental Surgery, Chicago.

Afternoon Session, May 16

THE Acute Abdomen," ANDY HALL and A. W. MODERT, Mt. Vernon.

"War Plant Surgery," H. P. MCCUISTION, Alton.

Discussion opened by EVERETT P. COLEMAN, Canton.

Discussion: E. G. QUATTLEBAUM, Rockford.

"Chest Injuries," WILLARD VAN HAZEL, Chicago.

"Treatment of Hip Fractures," ROBERT J. HYSLOP, Freeport.

Discussion: JAMES A. VALENTINE, Chicago.

"Advantages and Limitations of Skeletal Fixation Methods for Fractures," MANLEY A. PAGE, Chicago.

Discussion: E. W. RYERSON, Chicago.

"Low Back Pain," J. B. MOORE, Benton.

Considerable discussion was given to the factors necessary to diagnosis, including history of previous injury, the symptomatology, specific examination routines, differential diagnosis, and, finally, a detailed consideration of treatment.

In conclusion, the speaker stressed the necessity for the cooperation of management and worker; proper placement; adequate instruction; and early correct diagnosis and proper treatment.

DR. CARL M. PETERSON discussed "The Changing Panorama of Industrial Medical Requirements," with the opening statement that, while it is hazardous to predict what will happen in this field, there are a few trends which seem to be clear.

These trends appear to be as follows:

1. A sustained and continued interest in the welfare of the working population.
2. The fact that we possess the knowledge to make all occupations relatively safe, and the use of this knowledge at a much faster pace than formerly.
3. The tendency to extend medical care or health services into non-occupational affections or disabilities—the trend toward social security, and the trend toward the initiation, trial and use of medical care plans.

Just how changing medical requirements will manifest themselves directly, no one apparently knows; they do however center around the physician because of his training and experience, and such requirements have been applied to the working environment with increasing frequency. Since there are not enough physicians well trained, resort must be made to the use of community general practitioners.

There has been an increasing use of nurses in small industrial groups, and there are indications that physicians and nurses in industry should be more closely associated. Industrial nurses' groups are asking more and more for help from the medical profession.

More industrial hygiene consultants are needed, and on a highly ethical medical basis more are highly desirable. It is clear that the government services are not adequate to the demand.

Generally speaking, more emphasis should be given to prevention and perhaps less on clinical application. There should be better relationships between industrial and community physicians with provisions for early diagnosis and care.

Probably there will not be quite the degree of "letdown" in the postwar period to come as there was after World War I. Industrial health will be more of a factor in labor relations, and there will be more common and frequent emphasis. The matter of legislative problems is difficult of appraisal, but such factors should be based on real medical values.

Reliance should be placed on two vital factors: medical education and medical organization. No student should graduate without some knowledge of industrial medicine, industrial surgery, preventive medicine, and industrial hygiene. There has been some improvement in undergraduate training. For the practitioner, refresher and post-graduate courses have attained some success along these lines. An important item is the development of a clerkship in industrial medicine in industrial medical departments in industry or internships. Extensive graduate training will also need to be provided.

Industries and insurance companies have become actively interested, and funds have been developed in some instances for the aid of physicians in getting instruction and experience. A number of universities have awakened to the importance of specialization.

It is clear that future principles must be based on the extension of preventive medicine and public health administration into the fields of medical practice, and that certification will probably go in this direction.

There is a trend toward the clarification of compensation laws, and toward a cooperative plan of medical coverage and the establishment of active public relations, thus bringing to industry and labor what medicine has to give. This is indeed a great undertaking.

DR. EARLE H. THOMAS concluded the morning session, discussing "The Relation of Mouth Infection to Industrial Health: A Mouth Health Program for Industry."

There are many conditions originating in the mouth which cause trouble in other places in the human body. Infection is carried into the blood stream by local infection in the mouth, and it is very significant that 98% of persons harbor mouth infections.

In 1919 Mayo stated that practically all mouths are septic after 50 and a smaller proportion under the age of 50. As an example of progress in this direction, draft regulations are higher with respect to good teeth now than in World War I.

Another important conception relates to the fact that infection present in edentulous areas is in the proportion of one out of four.

The following considerations are of great importance with respect to dental hygiene:

1. Securing a healthy mouth after extractions.
2. The realization that there is no self repair with respect to dental extractions.
3. The disparity of size and effects with reference to infection and its aftermath.
4. The eyes are especially susceptible to dental infection.
5. The removal of teeth without care of trouble elsewhere in the body solves only part of the problem.
6. Abscesses and pyorrhea are not necessarily the only kinds of dental disease.
7. X-rays must not be taken as the final criterion of pathology; there must be supplemental clinical evidence.
8. There may be serious damage occurring without its being detected—mouth hygiene should be controlled even if the subject is apparently in good health.

Among the principles of a good mouth program for industry are the following:

1. A dental department can be established to good purpose and advantage in large industries; arrangements can be made outside for small groups.
2. Complete cooperation of industrial physicians is necessary to the success of a good mouth program in industry.
3. The diagnosis of mouth infection and its elimination is the leading feature in the program.
4. Protection of employees from incompetent professional advice and treatment is necessary.
5. X-rays should be made of all patients, but it should be borne in mind that the x-ray is not all that is necessary.
6. Health education forms a vital link in the chain of of a good dental program.
7. Consultation with physicians and other dental surgeons is a prerequisite for success.

DR. LEWIS OVERTON emphasized the importance of dental infection with respect to orthopedic conditions, particularly shoulder afflictions.

In closing the discussion, DR. E. L. VERNON commented on the importance of dental work in industry and placed the blame for needless and wholesale extraction of teeth in the young, at the door of the general practitioner.

Afternoon Session

DR. A. W. MODERT discussed "The Acute Abdomen."

A variety of diseases and structures are involved in this problem. The high mortality is not entirely due to the surgeon, but frequently to the failure to secure prompt diagnosis and early operation. If all diagnostic efforts fail, exploratory operation should be done.

Statistics on Illinois mortality were presented in a chart showing that in 1932 the mortality was 3,243 as compared to 2,780 in 1943. The largest group were appendectomies. Other conditions which contributed (not in order of greatest frequency, however) were intestinal obstructions, biliary calculi, hernia, non-malignant tumors, ulcers of the duodenum, non-malignant tumors of the ovary, and ectopic pregnancy.

The factors which contribute to mortality in operations on the acute abdomen, or in mortality without operation, are indiscriminate purging, delay of diagnosis, and late operations. The factors which have contributed to a low-

ering of the mortality, as shown in the figures, are better hospital facilities, better trained physicians and surgeons, and a more alert public.

With reference to experience with perforating ulcer, in 1078 cases perforations were found in 28%, as compared with the Mayo Clinic's experience of 32%. Caution was given in not waiting to resect the ulcer, but immediate operation is recommended.

Tumors of the adnexa and also ectopic pregnancy are apparently the most readily diagnosed abdominal conditions.

Mortality as experienced is indeed a challenge to the surgical profession; the time interval between prompt diagnosis and consultation, and operation should be very short. It is most important that much consideration be given to the role of the family physician and the education of the laity.

DR. EVERETT P. COLEMAN discussed DR. MODERT'S presentation, stating that the acute abdomen calls for immediate action, but adequate preparation and diagnosis are important. When there is a spreading peritonitis and a silent abdomen, treatment should be conservative. Sulpha drugs help to some extent when administered intravenously. It is obvious that an appendectomy is more simple after subsidence of acute manifestations.

Intestinal obstructions often present poor risks, and an immediate operation carries a high mortality. Good preparation is helpful here.

In mesenteric lymphadenitis, differentiation must be made from appendicitis. Young persons are prone to have abdominal pain with lymphadenitis.

DR. ANDY HALL supplemented the discussion, stating that great advances have been made in this field since 1890; up to that time DR. HALL had only seen two cases of acute abdomen.

Emphasis was placed upon the necessity for examination for hernia in the presence of acute abdominal symptoms. In conclusion, it was stated that the only excuse for high mortality in acute abdominal conditions is late examination and treatment.

DR. H. P. MCCUISTION presented the subject "War Plant Surgery."

This paper covered the experience of handling surgical cases in a war plant which had expanded from 3000 to 13,000 employees. The standard of examination was not as high as formerly, but placement of the handicapped was especially stressed and luetics were rejected.

As stated by the essayist, there was nothing unusual about the types of cases or the manner in which they were handled, but it was felt that results had been very good. The number of persons passing through the medical department was 138,426, to whom 175,548 treatments were given.

The number of lacerations and abrasions was 13,400, of which only eight were hospitalized for cellulitis and other complications. These wounds were treated with soap, water and sulphanilamide powder routinely.

The plant was situated close to a hospital, and an ambulance was used for hospital cases of which there were 176 admissions; among these were two deaths, one on account of a crushing injury including rupture of the spleen, and the other on account of multiple fractures. There were 10 hernial repairs, five strains and sprains, 10 burn cases, 20 contusions, 13 fractures (including foot, femur, pathological of the hip, fingers, skull, and surgical neck of the humerus), 19 low back cases, two cases due to accidental explosions, several penetrating wounds, a plastic on the hand with grafts, and several nitric acid burns.

A slide demonstration was given, showing x-rays and photographs of various injuries. One case of avulsion of the scalp was described in which the hair of a female subject was torn off; the injured scalp was sutured, but this sloughed; skin grafts were later applied and these sloughed, including another graft which also suffered the same results; finally a last graft took, using Paget's dermatome and the coagulum method of Sano.

In the absence of DR. E. G. QUATTLEBAUM, originally scheduled to discuss the above paper, CHAIRMAN J. S. LUNDHOLM gave a brief discussion, agreeing in the main with the principles cited. His experience included the acceptance of luetics for employment with the usual provisions made by the U. S. Public Health Service and other agencies. Any puncture wound is given tetanus antitoxin. In back injuries, novocaine is injected when other methods fail.

Other discussions, including DR. PAUL WHITE and DR. SIMMONS, noted experiences with head injuries and shrapnel wounds which do better when ambulatory if possible. Tetanus antitoxin is administered to cases exposed, and two reactions have been experienced; calcium gluconate is administered intramuscularly for the control of untoward reactions.

DR. WHITE believed that tetanus antitoxin should be used especially in small towns where there is considerable opportunity for contamination. It is better to give 3000 to 5000 units. Illustrative cases were briefly sketched where T.A.T. was used in a crushing wound and also in a burn.

DR. WILLARD VAN HAZEL discussed "Chest Injuries," stating that 5 to 10% of accidents and war wounds came within this category. There is considerable difficulty in treating this type of wound because of its association with other injuries; while prompt treatment is effective in some instances, others demand expectant treatment.

Alterations in intrathoracic pressure are usually cause for great concern; there may be a pneumothorax or a hemothorax or a combination of both, leading to an embarrassment of the cardio-respiratory system.

The causes of chest injuries may be a blunt instrument, penetration, and also violent air concussions. The nature of the injury resulting may cause shock, a compression ecchymosis, injuries to the chest wall including fractures, contusion or rupture of the lungs, and thoraco-abdominal wounds.

In the evaluation of chest injuries, the following must be considered: hemothorax (injury to the lungs, the thoracic wall, the vessels and other organs); pneumothorax (which may be spontaneous, tension, or because of a sucking wound); emphysema; and infection (including the chest wall—pneumonia—empyema—abscess).

In the diagnosis of chest injuries, attention should be given to shock, the pleural reflex, tension pneumothorax, a profuse progressive hemothorax, hemopericardium, and intraperitoneal injuries.

Differential diagnosis of sequelae brings up the following possibilities: (1) recurrent bleeding; (2) infection (including bronchopneumonia—infection of hemothorax—empyema—peritoneal infection—and abscess).

The usual treatment of shock and concussion was outlined. In the treatment of hemoptysis, morphine was recommended, the institution of pneumothorax, or a phrenic exeresis.

In the treatment of hemothorax, when it is small and stationary, use expectancy; when large, aspirate and do a pneumothorax; when rapidly increasing with serious symptoms, do a transfusion and thoracotomy.

The treatment of pneumothorax, when open, is closure after respiration, and irrigation or subsequent to closure; when valvular, thoracotomy for closure and suction drainage.

DR. WILLIAM ADAMS discussed DR. VAN HAZEL'S presentation, stating that approximately 25% of wounds involved the chest in World War I, and only 4 to 5% recovered. Emphasis was placed upon the principle that chest injuries may need local attention before general treatment.

Illustrations were given of cases of pressure wounds from bombing, the lantern slides showing the mechanics of this type of wound in the production of mediastinal, interstitial and pleural emphysema.

Probably no method has as yet been devised for the successful prevention of sudden death following blast injuries.

DR. ROBERT J. HYSLOP discussed "Treatment of Hip Fractures."

Fractures in and about the hip joint because of the hazard to the lives of the aged and their frequency, have received extensive consideration in the past 10 years. Early in that period most emphasis was placed on the neck fractures, and only more recently on the trochanteric types. The problems and principles of the neck fractures have been greatly clarified, and the treatment has been quite generally accepted. Trochanteric fractures generally have been considered less serious, less common in occurrence, non-union rare, and easier to treat. On closer study, however, these are not the facts, as our clinical experience has shown. The treatment of trochanteric fractures in principle has been established, but the method has not been well standardized.

General condition is really an important criterion and should be rapidly improved in preparation. Most cases are operated on the second or third day after the injury, although in some instances within a period of three weeks. Age, condition, type, x-ray findings, reduction methods are all necessary factors to be considered. Intertrochanteric fractures are difficult to manage, but usually heal. Inhalation anesthesia is ordinarily used, and spinal has been applied with good results. Reduction is as important as fixation, and the better the reduction, the better the results. Anterior-posterior and lateral x-rays are always necessary. An angulator, wire and nails have all been used with good results. It is important to get the cases up in a wheelchair early and to induce weight-bearing after trabeculation.

A report on 42 cases showed fractures of 29 necks and 13 trochanteric—the range of age was up to 90, there being five males and 37 females involved. There were no operational deaths, although three occurred during hospital stay from other causes. The average hospital stay was 29 days, and there were 10 subsequent deaths, 16%, during the first year. Unions occurred in 37 cases (that is to say, trabecular union).

Report on another series of 106 cases of hip fractures included 50 necks and 56 trochanterics, in which the average age was 76 and the treatment averaged 78 days, with a total mortality of 32%. Union was satisfactory in all trochanteric cases, but not with neck fractures.

Lantern slides were used to give an x-ray demonstration of the fracture locations and their healing, showing a high percentage of bony union. Emphasis was placed upon cutting down the hospital stay and putting the patients into wheelchairs early.

DR. JAMES A. VALENTINE, in discussing DR. HYSLOP'S presentation, said that it was unfortunate that hip fractures occur mostly in old age. The age and condition are important considerations, and the older the patient, the more prompt the operation should be. The patient should be got out of bed as early as possible. There are pathological fractures occurring in many instances before a fall has been sustained; the intertrochanteric type is the most common fracture experienced.

X-ray study is most essential, taking anterior-posterior and lateral views prior to reduction; traction may be done while preparing the patient. No attempt should be made to correct the rotation until an equal length of legs has been secured. X-rays should also be taken after reduction and then manipulation and angulation may be done if needed. Further x-rays should be taken if found necessary. No fixation should be done until reduction has been accomplished, and most fractures can be reduced.

Because of a great many measurements made on skeletons, it has been found wise to use a five-inch pin. The pin is not put through the trochanter. Incision is made at the lower border of the gluteus maximus and then one goes through the fascia of the vastus lateralis, when one can find the so-called "third" tuberosity and a little depression in the femur. A 5/32-inch drill is used to locate the head and then a 3/32-inch wire is passed using the rounded end (this passes through the trabeculae easily) then one meets resistance at about five inches—if resistance is encountered sooner, something is wrong. An x-ray, anterior-posterior and lateral, is taken and then a reamer is put over the head of the pin and the pin is driven into position obliquely.

Intertrochanteric fractures appear to be best handled with internal pins and external fixation.

In closing, an illustrative case was cited of a male aged 73. A five-inch nail had been used in this case. On the second day he was advised to use crutches, but without advice he walked to them. He came back to the office for observation in one month carrying his crutches and had not used them. He had been kept off work for two and a half months, the reason not being apparent. He finally went back to work at three and a half months. It is not recommended that this routine be followed, but it merely shows what can happen.

DR. MANLEY A. PAGE discussed "Advantages and Limitations of Skeletal Fixation Methods for Fractures." The purpose of this paper was to review briefly the results reported in the literature following skeletal fixation of fractures, and to compare these results with other methods of treatment of similar fractures. Lantern slide demonstration showed a few illustrative cases, and comments from personal experiences were given. An attempt was made, further, to present an unbiased editorial comment on the subject.

A most important point is the ability of the surgeon to use the method, and he must have experience in order to get good results. Very important considerations are the shortening of disability; restricting cost to a minimum; and reducing temporary or permanent impairment to a minimum.

It is hoped that there will be many future reports on this method, although it is believed that the literature will continue to report poor results on account of the many factors involved and because the method is not in general use.

Although no discussion of method details was given, 21 selected cases out of 150 were included in the series reported. Disability ranged from 40 to 180 days.

Examples of fractures included those of the femur, humerus, fibula and tibia.

It was felt that the method is justified (1) especially in fractures of the diaphyses when other methods are not selective and when they may be more complicated; and (2) in the internal fixation of metaphyses where the method is one of several which may be used.

In summary, it was believed that the method of external fixation will assume its proper place in the future, in favorable cases.

DR. J. B. MOORE concluded the afternoon session, speaking on "Low Back Pain." This discussion was limited to this condition as a problem of general surgery, excluding disease.

A general review of the anatomy of the lower portion of the back was given, including consideration of anomalies of all kinds; it was emphasized that there is no such thing as symmetry, that frequently one leg is shorter than the other, that lordosis is common, that tilted pelves and bad posture occur frequently.

It was felt that gynecological conditions do not cause as much trouble in producing lower back symptoms as does the prostate—although metastases in either case may.

Spondylolisthesis may or may not figure in injuries to legs or the muscles, and certain common injuries to the spine may be productive of symptoms. These may be all out of proportion to the violence involved—for example, stooping or strains of various kinds may result in the tearing of transverse processes. Arthritis may often exist without pain.

Acute strains and pain from stooping posture usually respond readily to manipulation.

Difficulties involving the sacro-iliac region and the lumbar region from the first to the fifth lumbar vertebra are likely to follow slipping or missteps; rest, heat and a compression dressing often are effective. Other conditions which may arise are extrusion of the nucleus pulposus and contraction of the fascia lata.

Especially important in diagnosis and as an aid to treatment are lateral x-rays, and sometimes partial laterals are helpful. Persistent sciatic pain should suggest the presence of tumor, protruded disc, or malignancy.

In conclusion, cases of low back pain should be treated rationally and individualized. Of more importance than supposed is the fact that many persons are encouraged by knowing that they have bad body mechanics and how such poor mechanics can be corrected.

Coal Tar in Medicine

—A Brief Study of its Manufacture, Composition and Use in Industrial Dermatitis—

FRANK C. COMBES, M.D.,
New York

WHEN coal tar was first introduced in medical practice it represented the black deposit recovered from the horizontal retorts of the illuminating gas plants. It was designated as "retort tar," a by-product of the distillation of bituminous coal, and was described in the U. S. Dispensatory as a black, viscous liquid with a specific gravity of 10.10-10.25, containing certain fractions determined by the method of fractional distillation to be as follows:

Light oils	about	2%
Middle oils	about	8-10%
Heavy oils	about	8-10%
Anthracene oils	about	16-20%

The chief ingredients of each of these fractions and the temperatures at which they are recovered are as follows:

Light oils (up to 200 C)
- Pyridines and crude tar bases (quinoline, isoquinoline, quinaldine, acridine, picolines, etc.
- Xylene
- Heavy solvent naphtha
- Toluene
- Benzene

Middle oils (200-250 C)
- Phenol
- Higher tar acids (cresol, orthocresol, cresylic acid, resin cresylic acid, etc.)
- Xylenols
- Unidentified factors

Heavy oils (250-300 C)
- Naphthalene
- Dimethyl naphthalene
- Methyl naphthalene
- Acenaphthene
- Monomethyl naphthalenes (alpha and beta)
- Unidentified oils

Anthracene oils (300-350 C)
- Phenanthrene
- Fluorene
- Anthracene
- Carbazole
- Unidentified oils

Pitch
- Heavy oils and greases
- Gas
- Red wax
- Carbon
- Sulfur compounds

In all cases, coal tar is a by-product. Its composition depends upon the process and material used in manufacturing it. Furthermore, which process and what material is used (coal, coke, lignite, shale, petroleum, etc.), the temperature maintained, time, etc., is determined depending upon what fractions are desired. These fractions do not exist in the parent substance as such, but, depending upon the temperature to which it is exposed, the rapidity with which this is attained, etc., they are synthesized, and are to be found in the tar residue from which they are redistilled at appropriate temperatures. For example, the proportion of tar acids (cresols, xylenols and higher phenols) is several times as great in a low temperature tar (retort temperature of 450-500 C), as in a high-temperature tar (retort temperature of 900-1200 C). With increasing temperatures the pitch increases and the middle oil and tar acid content decreases, while the free carbon content increases. The light oils, oddly, show little difference in high and low temperature tars. (Usually from 2 to 5%.)

Furthermore in high temperature tar the naphthalene fraction may be as high as 10%, whereas in low temperature tar it may be nil. Now naphthalene is commercially one of the most important ingredients of coal tar. Therefore most distillation is conducted with the purpose of producing a residue rich in naphthalene content.

The source of this type of tar in the United States is the high temperature coke oven, or coal tar obtained by the high temperature process, using a horizontal retort. It is usually obtainable from plants located in industrial centers near some iron and steel mills, and ordinarily near a coal deposit. While for commercial reasons this tar is highly desirable, it is undesirable medically. Some reports from the Pittsburgh district give the local tar the following composition:

Light oils	2. %
Middle oils	21.2%
Heavy and anthracene oils	17.3%

It is highly interesting to note that the middle oil fraction is increased over twice that found in low temperature tar. This fraction contains most of the naphthalenes. The heavy and anthracene oil fraction is from 35 to 50% below the normal requirements of a good medicinal tar. For commercial purposes it answers very well by supplying the naphthalene, carbolic and cresote oils which are wanted by industry. But for medicinal purposes the product does not represent a satisfactory tar for topical use.

The evolution of the illuminating-gas industry within the last quarter century increased the efficiency of production of gas by the use of petroleum and superheated steam as well as coal; thus furnishing gas containing a mixture of carbon monoxide and hydrogen ($C+H_2O=CO+2H$). This new process requires greatly increased temperatures and the use of materials never used before. Therefore by this change in manufacturing gas, the tar has been changed and contains now, not only the distillation products from high temperature carbonization, but from petroleum as well. This tar usually obtained from gas houses is known as "water-gas tar."

Without doubt these variations in "coke tar" and "water-gas tar" are responsible for the variations in therapeutic activity of medicinal tars and for much skin irritation when these substances are used when a low temperature coal tar is desired.

There is another important reason for discrepancies in tar sold for medicinal use, and that is the source of the tar as furnished to the medical profession. To understand this it becomes necessary to describe methods of collecting this substance.

Ordinarily the companies dealing in tar and tar products purchase all the tar from every source possible: illuminating-gas plants, coke ovens, etc. All of it is poured into large vats and mixed. Whenever medicinal tar is wanted, a portion of this mixture is heated to a temperature of 70 C to remove water, and is sold as such. This tar is of indefinite composition and at no time the same from two separate lots. Sometimes it is black, very heavy, almost solid; at other times, brown, thin and watery. The carbon content will vary from 5 to 35%.

Not long ago I was informed that at Jadassohn's and Neisser's clinic there was a "Diener," who was far superior at diagnosis and treatment to either of his chiefs, and who always went to the gashouse so as to obtain a tar from the bottom of the barrel. (In der

From the Department of Dermatology, New York University College of Medicine, and the Dermatological Service of the Third (New York University) Medical Division, Bellevue Hospital.

Tiefe liegt die Wahrheit.) He claimed that was the only type of tar to use, being less irritating. Clinical results proved this Diener's contention. It is difficult to understand this difference between "bottom tar" and "top tar," although it is logical to assume the possibility that the carbonization temperature cracks the primary tars into fixed gases, aromatic light oils and ammonia, and that they with naphthalene and other irritating aromatic compounds and liquors rise to the surface.

The basic difference between coal tar of British and Continental origin, and American tar is that the European product is the residue of low temperature carbonization in which horizontal retorts are used for collecting the tar, while the American industry has largely discarded this method. In most American tars, the middle oils, naphthalene fractions and heavy oil fractions have been increased several fold by newer methods of distillation. From a medical standpoint some of these fractions and the light oils are not desirable. The middle and heavy oils and naphthalenes are capable of causing erythemas and a papular dermatitis. The tar acids (middle oils), including phenol, the cresols, cresylic acid and the xylenols may cause burning of the skin, erythemas, pruritus and ecchymoses. The synthetic resins of industry are derived from this fraction and are familiar to every dermatologist as the cause of many instances of dermatitis venenata.

Low temperature or primary tar ("Urteer") is usually a dark brown liquid, orange or red, with an odor of hydrogen sulfide, mercaptans and phenols; never of naphthalene as found in high temperature tars. Its reaction is alkaline. (High temperature tars vary from pH 6.2 to 7.) In rare instances, especially when brown coal or lignite is the parent material, it may be solid at room temperature owing to presence of solid paraffins. Low temperature tars have a tendency to impart a red color to any water that comes in contact with them, particularly if the water is alkaline. It is this type of tar which Hebra used in the preparation of liquor picis alkalinus.

In order to eliminate the uncertainty in the supply of tar for medicinal purposes, synthetic tars have been prepared by Jaffrey[1]; Guy, Jacob and Weber[2]; and various so-called distillates and filtrates have been offered. Many of these latter are described by Becker and Obermayer[3]. They, and those pastes containing liquor picis carbonis are in general very inferior in activity to crude coal-tar pastes.

How can a physician obtain a good, active coal tar which contains a minimum of naphthalenes and other objectionable substances, but contains sufficient anthracene oil, heavy oil and pitch to exert keratoplastic, keratolytic, antiseptic and astringent actions?

Application in Industrial Dermatitis

THE therapy of a majority of the cases of contact dermatitis encountered in industry requires no further medication than the intelligent use of a good buffer solution such as liquor aluminum acetate (Burow's solution) diluted with 19 parts of water, and a good coal-tar paste. The latter, paradoxically is beneficial in both acute and chronic dermatitis. However, if there is much edema, cellulitis or infection present, wet compresses with well diluted Burow's solution should precede its use for several days. Convenient tablets which, when dissolved in a glass of water, release a lead-free aluminum acetate in appropriate dilution, and which are widely used in industry is Domeboro Tabs. Parkes[4] recommends them highly in the treatment of cutting-oil dermatitis at the Curtis Wright Corporation.

Not only do coal tars vary in their composition, but the pastes prepared from them vary in action, even when the ingredients are quantitatively and qualitatively identical.[5] In some instances, improper or careless compounding may result in a paste which is actually injurious.

The coal-tar paste used at New York University is manufactured commercially under the name Daxalan.* It consists of approximately 3% coal tar (low in naphthalene content), 5% zinc oxide and 50% starch in a special hydrophilic base.

In order to obtain the optimum benefit from the paste, it must be properly applied. Detailed instructions, which may be summarized on a leaflet and distributed to patients, and which have been previously published[4], are as follows:

"All previous medication should be carefully removed by means of some fixed oil. The paste should then be applied directly by means of a wooden spatula in a layer just thick enough to cover the lesion. The entire area should then be dusted with talcum until the surface is white. If possible it is preferable not to cover the lesion with a dressing. If this cannot be avoided, the lightest type of dressing should suffice. The paste should remain undisturbed for at least 24 hours, and in some cases it may be left for two or three days.

"Removal is best accomplished by using mineral oil or an emollient cream. No attempt should be made to cleanse the area completely; only the loose particles should be removed. A new layer of coal-tar paste is then applied in the manner previously described.

"If papules appear on the treated area, the coal tar should be discontinued. They are the forerunners of pustules which may complicate therapy and are encouraged by too much bandage and a paste that is too thin.

"Tar which has soiled linens and bedclothing may be readily removed by rubbing both sides of the material with lard and washing with soap and water.

"The following precautions should be observed:

"Avoid exposure to direct sunlight of the area to which tar is applied or has recently been applied. Tar is a photosensitizer, owing to the presence of acridine and anthracene oils.

"Avoid prolonged use of tar on hairy areas. Folliculitis may occur, owing to pitch and paraffin oils.

"Avoid changing the dressing often.

"Do not apply tar to infected or impetiginized lesions.

'Do not apply tar to more than one-quarter of the body surface at one time. There is danger of absorption, since coal tars contain from 2 to 4% phenol.

"Be on the lookout for evidence of sensitivity after prolonged use.

"Keep coal tar and coal-tar pastes in carefully sealed containers to avoid evaporation of volatile ingredients, which constitute a valuable part of their efficiency."

In some instances, especially when it is desired to spread the paste over large areas, it might with benefit be thinned. Experience has shown that this dilution, when made with a hydrophilic ointment base,** does not materially lessen the therapeutic efficacy of the paste. As much as 50% by weight of the diluent may be added. If plain petrolatum or other lipotropic oil or grease is used for this purpose it will interfere with the ability of the finished product to absorb secretions, causing hydrops of the epidermis, hyperemia, burning and pruritus. As shown by Strakosch,[6] Veyrières,[7] Percival,[8] and Dietel,[9] in the absence of such a hydrophilic base, zinc oxide and starch pastes exhibit no affinity for serum, sweat or aqueous fluids.

One valuable use for coal tar and one which is seldom mentioned in the literature is in dermatophytosis, both on the feet and on the hands where it may occur

*Daxalan, Dome Chemicals, Inc., New York City.

**Domolene, a mineral fat base containing 10% monostearate of glycerine is used for this purpose.

as eczematoid patches, often precipitated by occupational contacts. Pardo-Castello[10] has remarked that he believes "coal tar one of the most useful local agents in the treatment of ringworm of the feet."

Summary

MODERN, more efficient methods used for the manufacture of illuminating gas have resulted in the production of coal tars which vary in composition and in general are unsuitable for medicinal purposes.

2. The principal changes consist in an increase in the middle oil fraction, especially of the naphthalenes, which are cutaneous irritants. The heavy and anthracene oil fractions are from 35 to 50% below the requirements for a good medicinal tar.

3. The introduction of synthetic tars, distillates, so-called distillates, filtrates and the solution of coal tar in fatty and non-fatty bases has not solved this difficulty.

4. A good coal-tar paste, properly applied is one of the most valuable topical medications for industrial dermatitis due to contact irritants.

Bibliography

1. JAFFREY, W. R.: Report on the Therapeutically Active Principle Fraction of Crude Coal Tar. *Canad. M.A.J.*, 18:680, 1928.
2. GUY, W. H., JACOB, F. M., and WEBER, F.: Synthetic Tar Paste—A Therapeutic Suggestion. *Arch. Dermat. & Syph.*, 40:90, 1939.
3. BECKER, S. W. and OBERMAYER, M. E.: A Study of Crude Coal Tar and Allied Substances. *Arch. Dermat. & Syph.*, 31:796, 1935.
4. PARKES, M.: Ultra-Violet Radiation in the Treatment of Dermatitis Due to Cutting Oil. *Industrial Medicine*, 13:50, 1944.
5. COMBES, F. C.: The Use of Coal Tar in the Treatment of Skin Diseases. *New England J. Med.*, 228:384, 1943.
6. STRAKOSCH, E. A.: Studies on Ointments, VII. Zinc oxide pastes. *Arch. Dermat. & Syph.*, 49:8, 1944.
7. VEYRIERES: A propos de l'emploi des pastes en dermatologie. *Ann. de dermat. et syph.*, 4:236, 1923.
8. PERCIVAL, G. H.: The Action of Pastes. *Brit. J. Dermat.*, 41:231, 1929.
9. DIETEL, F.: Der feuchte Verband. *Deutsche med. Wchnschr.*, 65:65, 1939.
10. PARDO-CASTELLO, V.: Rational Pharmaceutic Treatment of Diseases of the Skin. *Arch. Dermat. & Syph.*, 223:49, 1944.

Unusual Hazard in a Fertilizer Factory

GEORGE H. ZERBST, M.D.,
Division of Industrial Health,
South Carolina State Board of Health,
Columbia, South Carolina

THE writer was called in to investigate the cause of sickness and absenteeism among a group of fertilizer workers. The chief complaint was eye irritation and shortness of breath, and the condition was present among both white and colored employees—the colored workers being the most numerous.

Investigation showed irritation of the conjunctiva, profuse lachrymation, edema of the upper and lower lids, congestion of the mucous membrane of the nasal passages, some dryness and soreness of the pharynx, and swelling of the lips. In some of the patients there were signs of bronchial irritation, and in some cases severe and prolonged attacks of asthma.

The condition was of recent origin and sudden in onset. Questioning revealed that the plant had been using cotton seed meal in making up fertilizer formulae, but, owing to a scarcity of this material, had recently imported from South America a quantity of castor bean pomace to use in place of the cotton seed meal. The average analysis of this is ammonia 5-8%; phosphoric acid 1-1.5%; potash 1 to 1.5%.[1] No other new material was being used in the plant.

The executives of the company stated that they had used ground castor oil bean pomace before and had experienced no difficulty. The present shipment, however, was composed of the whole dried oil extracted bean, and was, therefore, being ground in a mill in the fertilizer plant.

Inspection of the plant showed a grinding mill with no fan exhaust, and the floors, beams, and side walls of the grinding room covered with the finely powdered castor bean dust. No masks or protective devices were use during the grinding process or in the subsequent handling of the material.

The first impression was that the trouble was due to the inhalation and swallowing of a large amount of the castor bean dust. Castor beans contain a poisonous material of proteid composition—a toxalbumin known as ricin. This is deadly if injected subcutaneously in doses as small as 1/1000 milligram per kilogram of body weight.[2] However, the digestive juices destroy it unless swallowed in fairly large amount. The literature gives cases of death among children due to eating the whole bean—also numerous cases of animal poisoning. It is also known that the toxicity of castor beans varies considerably according to the locality in which grown; in some places they are eaten by children with impunity.[3] The symptoms, however, were not those of ricin poisoning, and questioning developed the fact that members of the employees' families, who had never been near the plant, were also suffering from the same complaint.

The workmen, although a shower bath was available, did not as a rule, bathe or change clothing before leaving the plant, but wore their working clothing home, where members of their families came in contact with them and then subsequently developed similar symptoms.

The facts that not all workers exposed to the dust were affected, and that family individuals who came in contact with only the dusty clothing of the workers developed the same allergic symptoms seem to point to the conclusion that the trouble present was an allergic reaction of susceptible individuals to a foreign protein.

The plant executives were advised to install an exhaust fan above the grinding mill, to have their employees wear a dust mask while working with the castor beans or meal, and, most important, to take a shower and change clothing before leaving the plant.

Upon discontinuing the use of the pomace, the trouble among the employees promptly cleared up.

In making a later investigation and conferring with a local physician, evidence was found that farmers using this fertilizer and spreading it on their fields developed similar symptoms—also members of their families.

That the allergic properties of this material are potent, and that human susceptibility is high, can be deduced from the number of cases—40 or more being reported. However, there were no fatalities and apparently no after effects from the exposure. A search of the literature reveals no information on this subject.

SUMMARY: Investigation of illness in a fertilizer factory showed workers sensitive to castor bean pomace dust, with definite allergic symptoms.

References

1. Occupational Diseases of the Skin, SCHWARTZ and TULIPAN, page 728. Lea & Febiger, Philadelphia, 1939.
2. CUSHNEY'S Pharm. & Therap., page 829, 1940, Lea & Febiger, Philadelphia.
3. ANDREWS, W. H.: Plant Poisoning. *Brit. M. J.*, 7 November, 1925, page 847.

Conditions in Storage Battery Plants

—Report of the Safety and Health Committee to the Association of American Battery Manufacturers, Spring Meeting, Cincinnati, Ohio, June 1, 1944

THERE is no evidence from either public or private reports that disabilities caused by lead poisoning in storage battery plants have either increased to any marked extent under wartime working conditions, or that such disabilities occur in sufficient number to indicate a serious problem in the industry.

The preventive measures which have been instituted in most plants on the recommendation of this Committee in its health campaign of several years ago have resulted in a rather broad adoption of the practices of testing for lead concentration in the air, stippled cell counts of the workers' blood, and removing a worker from suspected exposure when either the stippled cell count or the lead determined by urinalysis seems to exceed a reasonable standard, or seems to increase from test to test.

By following high grade engineering and medical practices, the storage battery industry has not only improved the actual situation but has also greatly improved its reputation. It is rather startling to find no evidence of any marked increase in disabilities or even of lead absorption under wartime working conditions which in some cases have involved increases of as much as 25% in daily work hours, and as much as 60% in hours worked weekly. It should be understood that this is not a case of the facts contradicting the theory, everything else being equal, that lengthening the hours of work has greater effect in the absorption of lead than simple arithmetical progression. We think that we may safely conclude that the effect of the longer hours was offset by the better medical and engineering controls.

Permit us to emphasize one conclusion which may properly be drawn from a number of years of interest and observation in this field. If a storage battery manufacturer is unable to maintain both regular engineering and medical controls in his plant, and he should be able to do both, then his chief reliance should be placed upon the medical controls because the prime purpose of these preventive measures is to guard the health of the worker and, where there is potential exposure, proper medical examinations will give advance notice when an individual worker is absorbing lead to an extent or at a rate which requires positive action to ensure avoidance of disabilities. This comment applies solely to ordinary exposures and does not apply in the case of massive exposures where the use of certified respirators or of air supplied masks can be the only sufficient protection to the worker.

DR. ROBERT A. KEHOE, of the University of Cincinnati, is still interested in our health problems, and we have reason to believe that we can work out some simple survey plan for the industry, under his guidance, from which additional information of value may be given to us.

Technique in Trauma

Book Review by
FREDERICK W. SLOBE, M.D.

TECHNIQUE IN TRAUMA, FRASER B. GURD and F. DOUGLAS ACKMAN; published by J. B. Lippincott Company, Philadelphia, Pennsylvania.

THIS book is compiled chiefly from articles previously published by the authors in the *Annals of Surgery*, together with additional text.

The first section is entitled, "A Practical Concept for the Treatment of Major and Minor Burns." The history of modern burn treatment and features of the burn problem which have a direct bearing on the result are discussed. A step-by-step description of the procedure used in the treatment of major burns of the thermal type is given. Major burns are immediately placed in the burn tent and the shock team goes into action, administering plasma through a canula in the long saphenous vein at the ankle, the vein being cut down upon. For large surface areas such as the trunk or thigh, where the patient is in a critical condition, the tannic acid-silver nitrate eschar is used (the first section deals with the original observation of the authors; in the second section they state emphatically that they have given up the tannic acid and other types of eschar treatment entirely in favor of the sulfathiazole emulsion). In all other instances, a 5% sulfathiazole oil in water emulsion is used locally, utilizing a thick pressure dressing. The authors are definitely in favor of the use of the sulfonamides locally. Plaster moulded splints are used freely, and dressings are changed very infrequently. Definite advantages are claimed for the sulfathiazole emulsion. Wide-mesh gauze is preferred. When indicated, grafting is done as soon after the fourteenth day as possible, using split-skin grafts cut with the Padgett dermatome. Interesting observations on the pathology of burns are presented, with particular reference to the relationship of such pathology to burn healing.

The second section consists of a report on the management of burns. The timing in this treatment is emphasized, detailed description being given to include general measures, local measures, and an analysis of 100 major burns according to the area of involvement, the depth of the burns, and the final result. Interesting and critical comments are made on these individual case reports. In this section, the authors indicate a complete abandonment of the eschar method of therapy in favor of compression dressings.

Section three deals with "Planned Timing in the Treatment of Wounds and Infections by Means of Infrequent Occlusive Dressings." An enlightening survey of the principles of wound treatment and their historical developments is presented. Desault, in 1813, is credited with first describing excision and debridement; wound drainage by gauze impregnated paraffin is credited to Morison, Gurd, McKim, and Orr; Ollier, in 1872, is said to be the first to have used plaster of Paris to enclose the wound and the whole limb completely; the value of rest is credited to Hilton in 1863; to Blair and Brown is credited the first description of the pressure dressing technique; in 1881 Morison advocated infrequent change of dressings; thus it is seen that "the general principles of closed and infrequent dressings are mainly ancient, and their modern adaptation almost 100 years old." A step-by-step procedure in the management of various types of wounds is presented. Wound suturing, the frequency of redressing, the care of infected wounds, and chemotherapy are described by illustrative case reports. The first six hours were called the "golden hours" by W. W. Keen many years ago.

A commentary on the three sections in this book is given by Dr. Ralph R. Fitzgerald, in which he asks pertinent questions concerning the authors' method of treating burns and wounds and answers them. His answers describe the advantages expected from the occlusive pressure dressing method in treating burns, the value of sulfathiazole emulsion used locally, the value of preliminary washing of a burned surface, the timing of skin grafting, the treatment for infected burns, the indications for changing burn dressings, the types of surgical operations performed in the treatment of recent wounds and in infected wounds, the results of the bacteriological study of wounds, the delayed primary suture and its indication, and the local versus the systemic use of the sulfonamides in the treatment of wounds and burns.

There are some excellent colored plates, photographs, and diagrams in this text. There are also several charts giving the timing in detail of the hospital treatment of burns and wounds. Numerous case reports are presented. An excellent bibliography is appended, an exceptional feature being an analysis of the historical development of the science and art of the treatment of burns and wounds. The steps, and the reason for taking them, in the treatment of these important conditions are logically presented. A great deal of informative material is condensed in this 68-page volume. Dealing with two such important subjects—burns and wounds—the book should have wide appeal; it represents the experiences and conclusions of the authors following the critical analysis of a large series of cases.

Industrial Medicine
Reg. U. S. Pat. Off.

The Journal of
Industrial Health, Traumatic Surgery and Occupational Diseases
Established 1932
Executive, Editorial and Publication Offices:
605 No. Michigan Ave., Chicago.

Editor: C. O. Sappington, M.D., Dr. P.H.
Associate Editors:
James T. Case, M.D., F.A.C.S.
Volney S. Cheney, M.D., F.A.C.S.
Bradley L. Coley, M.D., F.A.C.S.
Hart E. Fisher, M.D., F.A.C.S.
Otto P. Geier, M.D.
Lydia G. Giberson, M.D.
Emery R. Hayhurst, M.D.
Edward C. Holmblad, M.D., F.A.C.S.
Rutherford T. Johnstone, M.D.
Willis W. Lasher, M.D., F.A.C.S.
Robert T. Legge, M.D., F.A.C.S.
Christopher Leggo, M.D.
Oscar L. Levin, M.D.
Wm. D. McNally, M.D.
M. N. Newquist, M.D.
O. A. Sander, M.D.
Frederick W. Slobe, M.D., F.A.C.S.
Publisher: A. D. Cloud.

Volume 13 JULY, 1944 Number 7

The Changing Scene

SOME of the larger movements in industrial medicine are now getting straightened out to such an extent that their progress can be viewed in perspective. It is a short view, because many of the developments are so recent, but it is interesting. The principal development has been what might be called the renaissance of the doctor. When manpower became a problem, the health of the worker presented a major consideration, and "industrial health" grew into the shibboleth of all kinds of activities on the part of a host of official, unofficial and mostly lay agencies. Full of zeal and armed with propaganda, they swarmed upon it from every angle. The collective presence of large groups at work was the temptation; the statistical inquiry into every detail of personal life was the result. Nothing was overlooked—from food to phobias, fears to physic, emotions to enemas, every detail was exposed. Some workers didn't resent this; others—and many there were—already disgusted with the regimentation imposed in the name of the war emergency, began to wonder if they were goldfish. The general movement was vast, as anyone knew who was on the mailing list of the Washington send-outs. This went on for about two years. And then there seemed to be a falling off, if not in the interest, at least in the efforts. Some thought regarding the reason discloses a dawning realization that the whole business of industrial health is centered in the medical department, and that attempts to short circuit employee health matters around the doctor and the nurse will "die of their own too much." And thus there is a general swing to the industrial physician and his established basis; a more general recognition that procedures which have to do with the continued improvement of the standards of health of the working population must be medically guided. For it is now plain to all that industrial health is not a social project, nor even a public health project. It is an enterprise of industry *and* medicine. The two work together, in the interests of both, taking what they need where they find it.

Industrial medicine has emerged from this period stronger in, of, and by itself than ever before. The wiser agencies early adopted its principles and practices as these had been previously developed. It cannot be said that they will hand them back changed; they have only amplified them. The less wise agencies found their rules and theories ending-up in the common sense of these same principles and practices, and thus they are having to conform.

We see, therefore, the problem of employing the handicapped pretty well organized, with experiences already being translated into terms of capacity and placement;[1] the women problem, under such direct approaches as that of DR. MARION DAKIN,[2] for example, being channeled into understandable grooves; the matter of placement yielding to scientific job analyses;[3] the interest in prevention being vastly stimulated by the recording of variations from the normal;[4] the effects of toxic substances interpreted as surely in coefficients of their future, as in laboratory studies of their past;[5] the accident prone discoverable by mental indices;[6] the uses of new substances being conditioned to their possibilities of causing dermatitis; the untreated tuberculosis and venereal diseases coming to light through mass and group surveys; the principles of sanitation grown into practice in personal cleanliness; the periods of absence on account of injuries being made shorter by the newer surgery;[7] the state and Federal health departments leading the way in industrial hygiene and rapidly multiplying the areas and the instances of their usefulness. These are a few of the recent important developments; there are many more. Their significance is that, in every one, there has been the wisdom, vision, experience, and professional excellence of SOMEBODY, M.D. To paraphrase DR. STANLEY SEEGER'S statement that "The physician should be the central figure in health activities, whether in the field of clinical medicine, public health or preventive medicine," it might be said that the physician *is* the central figure, for no *health* activity is any better than its *medical* guidance.

Several industrial worker movements are not included in the foregoing. One is worker health education. The changing scene in respect of its propaganda is distinguished by the discussions elsewhere in these pages. Here, for the first time will be found the frank and candid treatment this subject has had coming to it. Ultimately there will be the admission, however reluctant, that the really effective health education of the worker will develop from the extension and elaboration of what the industrial physician and the industrial nurse are doing now.

For example: (1) "Employment of Cardiacs," *Indust. Med.*, June, 1944; (2) "Psychogenic Factors, etc." *Indust. Med.*, June, 1944; (3) "Physical Demands and Capacities Analysis," review, *Indust. Med.*, June, 1944; (4) "Records—The Seeing Eye of Industrial Medicine," *Indust. Med.*, January, 1944; (5) "Differential Heart Sound Meter" and refs., *Indust. Med.*, April, 1944; (6) "Psychiatry in Industrial Accidents," and refs., *Indust. Med.*, June 1944; (7) "Fixation of Fractures," *Indust. Med.*, April, 1944, and "Topography of Pins," *Indust. Med.*, May, 1944.

SULMEFRIN*

(Squibb Stabilized Aqueous Solution Sulfathiazole Sodium (2.5%) with *dl*-desoxyephedrine hydrochloride (0.125%))

Aids in Relieving Blocked Sinuses

Sulmefrin contains desoxyephedronium sulfathiazole—a combination having the antibacterial properties of sulfathiazole with the proved vasoconstrictive action of ephedrine-like compounds.

Clinical studies have shown that Sulmerfrin facilitates drainage and ventilation, generally producing prompt and prolonged vasoconstriction without such side-effects as sneezing, tachycardia or nervousness. It is mildly alkaline (pH approx. 9.0) and this, according to Turnbull, is preferable for nasal medication because (1) of high antibacterial activity in the pH range 8 to 10, and (2) it allows continuation of ciliary motion for a long period of time.

Sulmefrin may be administered by spray, drops or tamponage. It is supplied in 1-oz. dropper packages and 1-pint bottles. The solution is pink-tinted.

Sulmefrin—for intranasal treatment of

SINUSITIS
RHINITIS
PHARYNGITIS
LARYNGITIS

* "Sulmefrin" (Reg. U. S. Pat. Off.) is a trademark of E. R. Squibb & Sons.

For literature address the Professional Service Department, 745 Fifth Avenue, New York 22, N.Y.

E·R·SQUIBB & SONS

Manufacturing Chemists to the Medical Profession Since 1858

How to Interest Undergraduate Medical Students in Industrial Hygiene

CARL A. NAU, M.D.,
Department of Preventive Medicine and Public Health, University of Texas, Medical Branch, Galveston, Texas

THE MOST essential and effective medium of "selling" health supervision of employees to industry and labor is *personnel adequately trained for and interested in the job.* Universities have made considerable progress in training industrial chemists and toxicologists, industrial hygienists, and industrial hygiene and safety engineers. But little has been done by medical schools to interest and prepare undergraduate medical students in this field. This lack of training of medical students "carries over" to graduate practitioners a lack of interest in and understanding of the subject. Since most of our industries, however, are small and cannot provide full-time specifically and especially trained medical officers, the private general practitioner is called upon to serve the majority of all industrial employers and employees. Recognizing this, and also that more well trained specialists in industrial hygiene will be needed, medical schools can render a distinct service to all those who are employed, to their employers, and to their medical graduates by teaching, at least, the basic fundamentals of the potential relationship of occupation to health.

Industrial physicians are responsible directly for all recognized occupational diseases. But, in addition, they are really plant health officers; and, as such, are called upon in *all matters of health,* including the important field of sanitation.

With these points in mind, we have attempted to link together our teaching of sanitation[1] and industrial medicine and hygiene—both required courses. The sanitation course is given in the sophomore year—offering, in the first semester 15 two-hour demonstration lectures in:

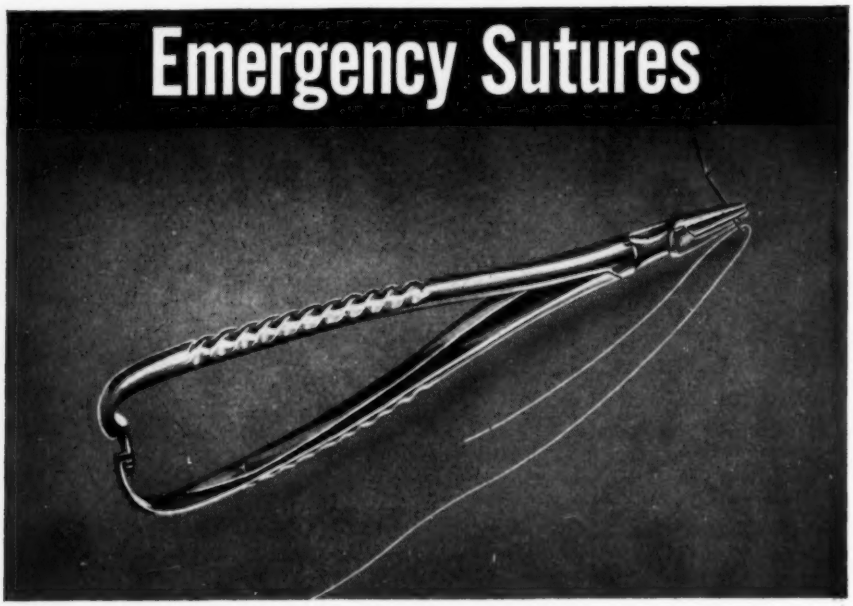
1. Rural and municipal water supplies.
2. Domestic and industrial sewage and waste disposal.
3. Food control; cafe and mess sanitation; garbage and refuse disposal.
4. Milk and meat inspection.
5. Rodent control.
6. Mosquito and fly control.
7. Back siphonage and cross connections.

In the second semester all students participate in 11 four-hour field trips—the class being divided into groups of 10 each. Each group is accompanied by one or more instructors; and the students are given the opportunity actively to participate. The main points emphasized in the field trips are:

1. Rural and municipal water supplies: location and design of small supplies; safety factors as applied to well and distribution system; chlorination of entire system; requirements of an approved supply.

2. Domestic and industrial sewage and waste disposal: inspection of septic tanks and leaching trenches; performance of soil exploration test to determine water level and select depths below surface for most suitable leaching; performance of standard tests to measure permeability of soil; consideration of alternative methods of sewage disposal when soil is not suitable for leaching; Imhoff tanks; and

1. A Practical Course in Environmental Sanitation for Medical Students. *Journal of the Association of American Medical Colleges,* 19, 173. (May) 1944.



• When industrial surgical emergencies arise the surgeon needs dependable sutures. Available to you in the Ethicon line is a broad assortment of Emergency Sutures, equipped with open eye, cutting point needles. Sterile, in Boilable Tubes.

ETHICON EMERGENCY SUTURES

SURGICAL GUT—Type A Plain, Type C Medium Chromic—000 to 2.
SURGICAL SILK—Type A White Twisted, Type B White Braided—000, 0, 2.
SKIN SUTURES—000, 00, 0.
SILKWORM GUT—000, 00, 0.
SURGICAL NYLON—4-0, 000, 00, 0.
SURGICAL HORSEHAIR—000.

ORDER THROUGH YOUR DEALER

ETHICON LOCK KNOT SUTURES

ETHICON SUTURE LABORATORIES

DIVISION OF Johnson & Johnson NEW BRUNSWICK, N. J.

World's Largest Manufacturer of Surgical Catgut

Suture Laboratories at New Brunswick, N. J.; Chicago, Ill.; Brazil; Argentina; England; Australia

biological high-rate trickling filter.

3. Food control: cafe and mess sanitation, garbage disposal, cafe inspection—methods of swabbing eating utensils, bacterial plate counts; methods and effectiveness of dish washing; systems of collection of garbage; various methods of disposal.

4. Milk, meat and seafood inspection: requirements of approval for dairy and milk plants; pasteurization; grading; laboratory control; inspection and handling of meats and seafoods; sanitary facilities.

5. Rodent control: classification and habits of rats; signs of infestation; stoppage; trapping; fumigation; flea index; typhus fever control program.

6. Mosquito and fly control: classification of mosquitoes; habits and characteristics; drainage; filling; stream training; oiling; larvacides; destruction of larvae by natural enemies; destruction of adults; screening; habits and breeding places of flies; trapping sprays; fumigation.

7. Back siphonage and cross connection: back-flow through valves of various types; back-siphonage from water closets; lifting of water through an open faucet through an air gap when negative pressure is created in the line or other cross connections.

After the field trips are completed, the students are assembled in groups of 40 to 45 and are permitted to conduct open seminars on the various field trips. They ask and answer questions and clarify such points as are not clear to them.

As a prelude to the formal teaching of industrial hygiene by way of lectures, several industrial field trips are made to industries which offer excellent opportunity for the demonstration of many varied potential hazards. It is possible to demonstrate:

1. The effect of particle size on the settling rates of dust and the collection of air samples for dust counting.

2. The measurement of concentration of irritant gases (e.g., chlorine, sulfur dioxide and nitrogen oxides) by absorption in a suitable medium.

3. Organic vapors and the measurement of volatility of solvent liquids under conditions simulating those of actual use in industry.

4. The fuming properties of various metals.

5. An organized industrial medical department.

These industrial field trips are made in small groups under the direction of the plant medical and/or safety department, with the assistance of members of our staff.

In the last trimester of the Junior year, 12 additional one-hour lecture demonstrations are given. By this time the students have had hospital and clinic contacts and are prepared to understand better the clinical applications. The following subjects are discussed:

1. National and state compensation laws.

2. Dusts: classification; counts, exposure, effects, x-ray.

3. Solvents; vapors.

4. Metals; fumes. 5. Gases.

6. Skin irritants.

7. Excessive heat and humidity.

8. Medical and safety organization for plants of various sizes; and their responsibility to other technical personnel.

9. Industrial sanitation.

10. Control measures — general and specific; personnel protection.

11. Industrial nutrition; fatigue; monotony.

12. Lighting, ventilation and air conditioning.

Histories of actual cases occurring in Texas industries are presented and discussed.

Special emphasis is placed upon the potential relationship of occupation to health; and upon the importance of obtaining accurate and detailed occupational histories. Emphasis is also put upon the necessity of keeping accurate records, of doing laboratory studies of environmental conditions as well as clinical material; and upon the necessity of keeping *well informed on conditions of operation and exposure and contact with intermediate and finished products.*

MEDICALLY SOUND THERAPY
for
MINOR BURNS AND ABRASIONS

1. ***Unguentine is analgesic.*** For prompt relief of pain.

2. ***Unguentine is antiseptic.*** It fights infection with sustained contact and action.

3. ***Unguentine promotes healing.*** It aids regeneration, usually without scar formation.

UNGUENTINE is a useful surgical dressing. Its continuous antiseptic action is non-irritating and non-toxic; its contact with affected parts is prolonged—and it prevents the bandage from adhering to the wound.

FOR FREE SAMPLE of UNGUENTINE for professional and personal use, write—THE NORWICH PHARMACAL COMPANY, Norwich, New York.

Norwich®

*T. M. REG. U. S. PAT. OFF.

It is our impression that undergraduate students are intensely interested in the field of industrial medicine, and develop a consciousness of the importance of environmental sanitation and its potential effect upon health. They feel that they are learning things which will be useful to them in their general practice of medicine.

Industrial Health Forum

—This Material is prepared by the Division of Occupational Hygiene, Massachusetts Department of Labor and Industries, Boston—

Dermatitis

QUESTION: We recently purchased some synthetic rubber gloves, but in a few days the workers stopped wearing them because they developed a rash on their hands which was worse than the original condition they were intended to prevent. Could this rash have come from the gloves?

ANSWER: It is quite possible that the gloves were the cause of the dermatitis, since sensitivity to some of the newer synthetic rubber products is quite common. In the manufacture of synthetic rubber, it is necessary to use greater quantities of dermatitis-producing materials than in the manufacture of natural rubber goods. These materials, such as the anti-oxidants and accelerators, are in many instances powerful skin sensitizers, and it is quite possible that your workers are demonstrating such sensitivity. To prove or disprove this would require patch testing of the workers with the rubber gloves. However, dermatitis frequently occurs from the use of rubber gloves with improper care. Softening and irritation of the hands, with subsequent dermatitis, may occur from perspiration within the glove. Gloves should be carefully washed in soap and warm water, thoroughly rinsed and dried. Before use, the hand and inside of the glove should be liberally dusted with an absorbent powder such as potassium bitartrate, talcum or lycopodium. The hands should not be covered with a greasy material before donning the gloves.

Oil Mists

QUESTION: Is there any hazard to being in an atmosphere of oil mists? The room in which I work is constantly filled with a fine spray of oil from some of the machines. It sticks to my clothes and hands, and I was wondering whether there was any danger from breathing it.

ANSWER: We know of no reported cases of any industrial illness due to oil mists. There is a condition in which oil may produce a pneumonia, but this has occurred only after the actual introduction of massive amounts through the nostrils or mouth. Cases of lung irritation have been reported in oil refineries, but these were found to be due to the impurities in the crude oil, such as sulfur and chlorine. If symptoms of cough and expectoration develop, it is possible that the oil may be the cause, since mineral oils will act as an irritant to the lung tissue.

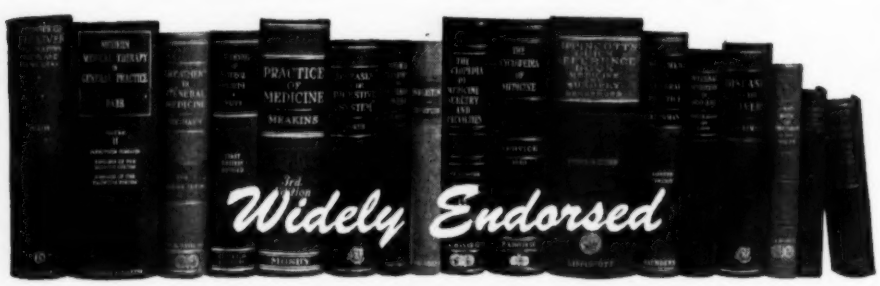
Spray Painting

QUESTION: I am a spray painter using lacquer, and once in a while get a pretty good dose of the fumes when they kick back from the part that I am spraying. I once got dizzy from this and lately have been having headaches. Could the lacquer be responsible?

ANSWER: Most lacquers contain as solvents a mixture of acetates, alcohols, naphtha and occasional toluol or xylol. None of these substances is very toxic. The pigments used in lacquers usually are not harmful and in any case would not produce headaches or dizziness. However, the operation is faulty, since correct use of a properly designed spray booth should not permit rebound and inhalation of vapors. It would be advisable to have an engineer from your State Department of Health (Division of Industrial Hygiene) visit the plant to correct the fault.

Solder

QUESTION: I solder by means of an electric iron, using a flux and a lead compound called 60-40. A lot of smoke is given off during the process,



in the Medical Management of
BILIARY TRACT DISEASE

The administration of Decholin, the original dehydrocholic (triketocholanic) acid, either orally or intravenously in the form of Decholin sodium, is followed by an increase in secretion of bile which may amount to as much as 200 per cent.

This thin, free-flowing liver-bile, secreted under considerably greater pressure, serves the valuable purpose of flushing both, the intrahepatic as well as the extrahepatic passages. Mucus, inspissated bile, gravel, and pus-laden secretions (if present) are washed before it.

This therapeutic influence is used to advantage in the medical management of many biliary tract disorders. It is the keystone of therapy in chronic cholecystitis, noncalculous cholangitis, biliary engorgement, biliary dyskinesia, hepatic insufficiency. It produces not only symptomatic relief, but demonstrable, objective improvement. Combined with a diet high in fat, it promotes drainage of the entire biliary tree, including the gallbladder. • Decholin is contraindicated in complete obstruction of the common or hepatic bile duct.

Physicians are invited to send for a copy of the 4th (condensed) edition of the brochure "Biliary Tract Disturbances"

Riedel - de Haen. Inc. • New York 13, N. Y.

ACCEPTED AMERICAL MEDICAL ASSN. COUNCIL ACCEPTED SINCE 1932

Decholin

REG U.S. PAT OFF

PACE-MAKER OF BILE ACID THERAPY

and it makes me cough and irritates my throat. Is it possible that I am getting lead poisoning?

ANSWER: The compound 60-40 probably refers to a solder containing 60 parts of lead and 40 parts of tin. Under ordinary working conditions, there is practically no lead in the atmosphere from such soldering operations. The irritation of the nose and throat is probably due to the liberation into the atmosphere of a small amount of organic and inorganic compounds derived from the flux. These fluxes are usually rosin, zinc salts or some other acid-type substance in a petrolatum base, and when heated a small amount of acetic substances is volatilized. Hence, while annoying, the fumes are probably not harmful to health in any important way. However, if the material is irritating, it should of course be removed by local exhaust ventilation.

Marble Dust

QUESTION: We have recently employed a man who shows some evidence of fibrosis of the lungs. He denies any exposure to silica dust, but states that he worked for about 10 years in Italy quarrying marble. I did not know that marble could give rise to silicosis.

ANSWER: Marble is metamorphosed limestone (calcium carbonate) and does not produce silicosis. If the individual has any marked degree of fibrosis, it is very likely that he was exposed to some siliceous dust other than marble, since there is usually very little contamination of the limestone with silica. A more careful and detailed history of the man's exposure will probably reveal the source of the pneumoconiosis.

Auxiliary Worker

QUESTION: Our industry has expanded from 500 to 750 employees in the past year. I am the only plant nurse, and I need an assistant. The personnel manager says that, owing to the nurse shortage, I must train an auxiliary worker. What duties and responsibilities may be given to an inexperienced attendant in a dispensary?

ANSWER: The auxiliary worker may be trained to: do clerical work and filing; sterilize instruments; keep the unit clean and in order; assist the doctor in examinations; replenish supplies; act as a receptionist; do first aid under supervision.

The auxiliary worker will need written standing orders, a uniform, and a place in the medical organization that will make her or him feel that the service rendered is essential.

Soap

QUESTION: What would be the most suitable soap to be used in our factory? We were recently visited by a salesman who claims to have a soap which is non-alkaline and hence superior to other soaps.

ANSWER: Ninety-five per cent of people do not need any special kind of soap, and any good toilet soap is suitable. In about 5% of cases a special type of cleanser is indicated, and it is here that a non-alkaline soap may be useful. These non-alkaline soaps consist essentially of sulfonated oil with the addition of one of the newer wetting agents. They do not lather well and are much more expensive. If there are multiple soap containers in your lavatories, it might be advisable to have one of them contain a special soap and the others the ordinary industrial cleanser. A list of special cleansers may be obtained by writing to your State Department of Health (Department of Industrial Hygiene).

Safety Goggles

QUESTION: I have been asked by our safety committee to get some reliable literature on how to select goggles for industrial use. Where can I find this information?

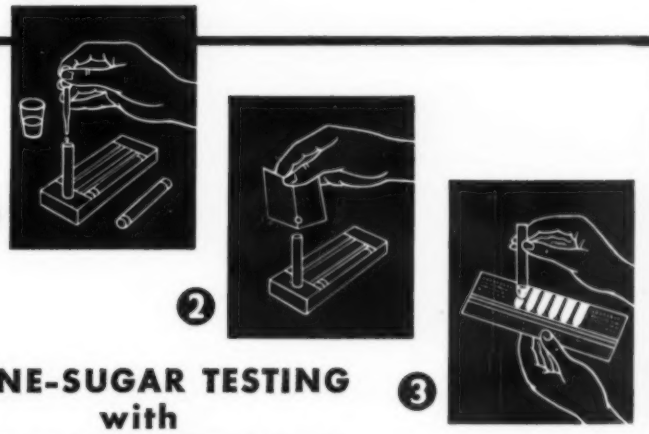
ANSWER: The National Society for the Prevention of Blindness, 1790 Broadway, New York City, provides information concerning policies for establishing a program for safety glasses. The National Bureau of Standards Handbook H24, entitled, "American Standard Safety Code for the Protection of Heads, Eyes, and Respiratory Organs," shows how to select safety glasses in relation to particular hazards. Catalogues of optical concerns will give the prices on such equipment. The March, 1944, issue of *National Safety News* should be very helpful.

Electroplating Materials

QUESTION: What are the rules regarding storage of materials around electroplating tanks? I keep the cyanides in a separate container, but an inspector recently told us that other precautions should be taken.

ANSWER: Acids should be stored

Simple as ... 1-2-3-



URINE-SUGAR TESTING with CLINITEST

(A Tablet Copper Reduction Method)

This refinement and adaptation of the copper reduction methods of Fehling and Benedict introduces several practical advantages for actual use.

FOR LABORATORY

TWO MAJOR IMPROVEMENTS ARE:

Elimination of external heat—sufficient alkali is included so that all heat required for the test is self-generated within the test tube.

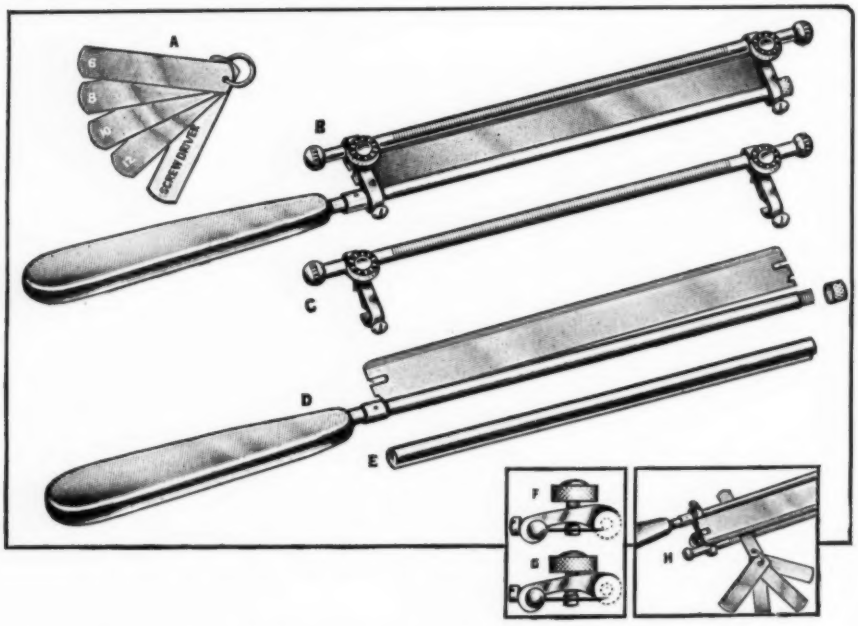
Elimination of reagent-measuring—amount accurately controlled by incorporation of standardized dry reagent mixture into Clinitest Tablet.

SIMPLE, SPEEDY TECHNIC

Just drop a Clinitest Tablet into test tube containing proper amount of diluted urine. Allow for reaction—compare with color scale.

Available through your prescription pharmacy or medical supply house. Write for full descriptive literature. Dept. IM-7.

EFFERVESCENT PRODUCTS, INC.
ELKHART, INDIANA



Now Offered with Detachable Blade and Thickness Gauges

Modified Blair-Brown Skin Grafting Knife with Marck's Thickness Determining Attachment

At the suggestion of many users, the new Blair-Brown Skin Grafting Knife is now offered with a detachable blade and the Marck's Thickness Determining Attachment is now furnished with a set of four copper plate gauges for accurately regulating the thickness of the desired skin graft from 6 to 36 thousandths of an inch in 2 thousandths inch steps. In use, the gauges are selected for the desired thickness and are then placed between the knife edge and the threaded grip rod as shown in illustration "H" above. The knurled thumb screws at both ends of the Marck's Attachment then are adjusted until the space between the grip rod and knife edge provides a light tension on the gauges.

The detachable blade feature greatly reduces the cost of using the knife since extra blades are inexpensive and make it possible to own the equivalent of five knives at less than the former cost of two knives. These blades are made of razor steel and when properly stropped by the emery flour method before each operation have been used in twenty or more operations before needing honing. A honing tube, "E," is supplied with each knife to facilitate changing the angle for proper honing. A metal container which will hold seven blades is also included for use in storing and sterilizing the blades.

B-B967 — Modified Blair-Brown Skin Grafting Knife, "B," complete with one blade, Marck's Thickness Determining Attachment and set of four gauges..... **$18.50**

B-B968 — Modified Blair-Brown Skin Grafting Knife, "D" (same as above but without Thickness Determining Attachment)..... **$8.50**

B-B970 — Blair-Brown Knife Blades only, each..... **$2.00**

A. S. ALOE COMPANY

1831 Olive St. • St. Louis 3, Missouri

separately and so arranged that, in case of a break or leak, they will not come in contact with any other chemical (particularly cyanides and sulphides) or flammable material which might serve as the starting point of a serious fire. The lowest possible point for storage of this material is usually best, as control in case of a leak or break is easier. Lead-lined pans or shallow tanks are often used. Cyanides should be stored separately in locked cabinets, well removed and always above the level of the acid storage place. In case of an accidental break in any acid container, it should be impossible for the acid to come into contact with the cyanide, as cyanide compounds and solutions are potentially very dangerous in the presence of any acid. Sulphides should be handled in a manner similar to the cyanides.

Magnesium Burns

QUESTION: Are burns from magnesium worse than other kinds? What are the methods of protecting against this hazard?

ANSWER: Burns from magnesium are apt to be severe, since magnesium melts at a high temperature. Furthermore, owing to its explosive properties, the hazard of a burn from magnesium is much greater than from other metals. Methods of protection are as follows: *Eye protection* against splash and radiant energy is essential. Properly chosen goggles or non-combustible face shields should be provided and worn. *Fire-resistant clothing* should be worn by all employees exposed to the heated metal. Clothes made of wool, denim or canvas, treated with a flame-proofing agent, are satisfactory. It is necessary to treat the clothes each time they are laundered. A 15% solution of ammonium sulfamate may be used, and several other compounds are equally effective. *Fire blankets* should be available at appropriate locations. *First aid facilities* should always be available. Workers should be instructed to report all magnesium burns promptly, no matter how trivial they may appear to be.

Diseases Caused by Grain

QUESTION: I recently saw an article describing silicosis which resulted from contamination of grain with sand. Does the grain itself produce any disease other than from this type of contamination?

ANSWER: In a study of several hundred men working as grain handlers, a non-specific lung infection was found in 1.8%, pulmonary fibrosis in 2.3% and clinically significant tuberculosis in another 1.8%. In addition, grain may produce allergic pulmonary manifestations, and also frequently produces a dermatitis of the hands caused by a parasite in the grain.

Minor Injuries and Illnesses

QUESTION: There are 600 employees in my plant. We have an excellent safety program and hence a low accident record. However, I know that many of the workers do not seek first aid for minor abrasions and illnesses. Frequently I do not see more than six or eight patients in a day, and half of them come from the office. What may I do to attract workers to my first aid room for treatment of minor injuries and illnesses?

ANSWER: Try to develop a program which will not only stimulate interest but also create a pressing demand for increased protective services from the medical department. The cooperation of many persons in your plant is necessary, and it should not be difficult to sell ideas for expansion of health services to the management. The program for education should be very carefully planned. Call in experts, such as your state consultant in industrial nursing, safety engineer, plant physician and your consultant ophthalmologist. Arrange a series of conferences with representatives of the workers, foremen, plant superintendents, special supervisors and matrons. If you have a labor-management committee, attempt to interest them in a health program.

Dioxane

QUESTION: Our chemists are thinking of introducing dioxane as a solvent for special process. Could you tell me something about its toxicity?

ANSWER: The industrial use of diox-

ane (diethylene oxide) has been incriminated as the cause of five deaths in an English synthetic silk factory in 1933 where there was acute exposure to large doses of the chemical. All workers developed vomiting and pains in the back, which were followed by paralysis of the bladder, coma and death five to eight days after the beginning of the illness. There are several studies in the literature of experimental work on animals, and it has been shown that its toxicity, when inhaled or ingested, is of comparatively low order. Serious harm, however, may be produced by large doses. The primary changes are damage to the kidneys and liver. The industrial hazard from absorption through the skin is not established, and chronic effects from industrial use are rare.

Dysmenorrhea

QUESTION: Could you suggest any policy to be carried out in cases of dysmenorrhea? The problem constantly recurs, since we have a large proportion of women in our employ. I have heard about the use of exercises to control it. Could you refer me to the article in question?

ANSWER: Dysmenorrhea is not a major problem in industry or a major cause of absenteeism. However, it is advisable that a rest room be available for women, and they should be permitted 20-minute rest periods during the acute phase. Occasionally they may need several hours of rest at the onset of the menses. They should not be sent home, as the vast majority can resume work after a short period. A hot water bottle and a palliative drug may be helpful. The use of exercises may be of some aid, as indicated in the article, "Menstrual Exercises," by A. C. DICK, M.D., et al., which appeared in the September, 1943, issue of INDUSTRIAL MEDICINE.

Cleaning Degreaser Tanks

QUESTION: Would you be kind enough to advise us on the necessary precautions in cleaning out a large trichlorethylene degreaser tank? We recently almost had a fatality in a worker who cleaned out the tank on a Monday after it had been drained of solution on Saturday. Fortunately, somebody was near this man, and he was pulled out unconscious, but recovered.

ANSWER: The cleaning of large degreaser tanks exposes the worker to the hazard of entering an atmosphere deficient in oxygen. Trichlorethylene is heavier than air, and, even though the tank had been left open for two days, enough of the vapor would remain in the tank to exclude air. The man became unconscious not entirely because of exposure to fumes of trichlorethylene, but also because the atmosphere was almost entirely deficient in oxygen. Every man who is doing this work should be supplied with an airline respirator or a self-contained breathing apparatus. A second worker should be nearby and alert to prevent any accident.

PRESSURE TREATMENT of BURNS

An Improved Technique comes Home from War!

Experience during the past two or three years – especially that gained as a result of war casualties – has produced profound changes in the treatment of injuries, including burns.

A new technique in the treatment of burns, now advocated by the National Research Council, involves the use of pressure dressings. Bland* ointment is applied to the wound, covered by sterile gauze and soft padding such as mechanics' waste. An Ace Elastic Bandage is then applied with firm but non-constricting pressure. This tends to reduce the oozing of serum and the exudation of plasma to deeper tissue. Tendency to shock is minimized and the percentage of subsequent infection is as low, or lower, than with other methods of treatment.

It is important that the dressing be stationary to prevent mechanical irritation and interference with the growth of the new forming epithelium. To accomplish this Ace Skin Adherent is applied by swab to the areas surrounding the wound.

In the absence of systemic infection the dressing need not be changed before the fifth day – and may be left in place as long as twelve to fourteen days.

Further information concerning the Ace Skin Adherent and Ace Elastic Bandages will be supplied on request.

**Surgeon General's Off. Circular letter No. 161.*

B-D PRODUCTS
Made for the Profession

BECTON, DICKINSON & CO., RUTHERFORD, NEW JERSEY

"Athlete's Foot"

QUESTION: We have just installed some new showers in our plant and think it would be advisable to have a foot bath to prevent "athlete's foot."

Could you tell us the substance to be used to kill the germ?

ANSWER: A variety of chemicals may be employed as a fungicide in foot baths located in shower rooms. The following solutions may be used, in the following order of preference:

1. One per cent solution of sodium hypochlorite.
2. 0.5% solution of copper sulfate.
3. 1-10,000 solution of bichloride of mercury.

GENERAL

—*Continued from page 18.*

troduced the Conference president, DR. DANIEL LYNCH, medical director, New England Telephone and Telegraph Company. In the afternoon two speakers were presented, DR. JAMES REGAN, of Boston, professor of ophthalmology at Tufts Medical School and consultant, Boston City Hospital, and Massachusetts Eye and Ear Infirmary; and DR. ELLIS FREEMAN, of American Optical's visual science department. Following the meeting, the visitors adjourned to the Cohasse Country Club for golf and dinner. Among those attending the conference were representatives of the New England Industrial Nursing Association.

Caries-Fluorine Demonstration

AS A FIRST step in a long-range demonstration to determine the practicability of mass protection against dental caries by adding fluorine to public drinking water supplies, the New York State Department of Health recently began dental examinations of school chil-

—*Continued on page 568.*

Rhode Island Meetings

—Proceedings of the First Annual Meeting of the Rhode Island Society of Industrial Physicians and Surgeons, and the Rhode Island Industrial Nurses' Club, Providence, May 23, 1944—

Reported by

C. O. SAPPINGTON, M.D., Dr.P.H.

REPLETE with subjects of many phases of industrial health, medicine and hygiene, as well as nursing, the first annual meeting of the above organizations was held in conjunction with the Rhode Island Section Meeting of the NEW ENGLAND CONFERENCE OF INDUSTRIAL PHYSICIANS and the New England Association of Industrial Nurses. Among the subjects considered were industrial nursing, occupational dermatoses, the Rhode Island Cash Sickness Benefit Plan, child labor, industrial ophthalmology, workmen's compensation curative center, hospitalization and cash sickness insurance, and a symposium on the reconditioning of disabled war veterans and their assimilation by industry.

DR. CHARLES L. FARRELL and MISS HELENA C. MAHONEY welcomed the visitors and the attending physicians and nurses, stressing the necessity for cooperation among various societies and groups interested in industrial medicine and nursing, with a special vote of thanks to those who had to do particularly with the program and also to the plant and family physicians who were cooperating.

CATHERINE R. DEMPSEY, R.N., in discussing "Trends in Industrial Nursing," pointed out that health is the wealth of the nation, the real basis for continued production—that it is more expensive to rehabilitate individuals than to keep them well.

It is of considerable significance that in 1895 the first industrial nurses' group was formed in New England.

The details of the program with respect to prevention of illness were outlined, emphasizing the principle that the worker should be made health conscious rather than neurotic.

A review of the duties of nurses was given including assisting in examinations, follow-up safety procedures, home nursing, personnel relations, health education, and the like, necessitating a broad knowledge of the factors of healthful living. It is not expected that these activities will take the place of public health work as such, but they can certainly augment public health procedures and can be very specific as to industrial relationships. This necessitates being informed on plant operations and materials, as well as being cognizant of their effects.

Prevention has, therefore, become the keynote of industrial nursing and, as a recent example of the interest displayed, the attendance of 435 industrial nurses from 33 states at the recent annual meeting of the AMERICAN ASSOCIATION OF INDUSTRIAL NURSES at St. Louis was cited.

In conclusion, MISS DEMPSEY said that the New England group established a pattern 30 years ago, and that the aims originally set forth are now being realized.

MR. MORTIMER W. NEWTON discussed the "Rhode Island Cash Sickness Benefit: Its First Year." Since June, 1942, it is believed that the pattern has been set for this type of organization and that it is a better plan than any Federal proposal.

This plan does not include medical or hospital care, nor maternal or other types of care, and cannot be considered socialized medicine—it is simply a cash benefit plan for persons out of work because of sickness, and can really be called sickness insurance. The requisite to participation is a contribution of 1% per year up to $3000 salary. Benefits on this plan began April, 1943.

Different types of forms were discussed, including the filing of the claim by the claimant; the continuation of the claim on examination; and the continuation of the claim when not examined. Examination occurs

BRASS
Boilers
ARE BACK!
Pelton Sterilizers are again being manufactured for civilian use with cast brass lifetime boilers—the same exclusive Pelton design, with sloping bottom to facilitate draining, and smooth, easily cleaned interior without humps or ridges. Now you can replace your old sterilizer with a brand new Pelton of standard construction and design, including non-tilting tray lift, dripless cover hinges and the famous "Sentry" Cutoff, for complete safety when forgotten. Better order from your dealer at once!
PELTON & CRANE COMPANY
DETROIT, MICHIGAN
FULL AUTOMATIC OR
3-SPEED CONTROL
Pelton Sterilizers are still available with your choice of thermostat or manual switch control; both types have famous "Sentry" Cutoff, cast brass boiler, dripless cover hinges, and other exclusive Pelton features. Available in 14", 16", 17" and 20" models.
Pelton Sterilizers

within five days of filing the claim, and proof of illness is certified by a physician.

Thus far 30% of those filing an original claim have failed to report for an examination; 35% have refused help in this plan because of their ability to work.

Arrangements have been made for an appeal from the original decision to a special board and from thence to the courts—only one court appeal has been experienced up to this time. An advisory board has been appointed from among the members of the Rhode Island Medical Society.

MR. S. W. HOMAN spoke on "Child Labor During War Time."

Although no exact figures are available, approximately three million children (ages 14 to 17) have been employed on full-time or part-time work in industry in New England, and, of these, approximately one million are in the 14 to 15 years of age group. This means that approximately one out of five children in these age groups is employed.

There has, therefore, been a great increase in employment of children in this state and all over the nation from 1940 to 1943, inclusive. High school enrollments have decreased 14%.

In spite of all this, there is no conclusive evidence of a greater number of accidents among children than among adults employed in industry.

With respect to regulations, it is important to set maximum hours of work, there have been Federal provisions made with regard to this and other factors by the Children's Bureau; various types of employment have been restricted.

The training program should provide thorough training and close supervision; a safe and healthy place to work; and employment only in the least hazardous jobs.

It was concluded that it is possible to employ children in safe jobs and also to make better records than adults on accident experience; information is now available to carry out these fundamentals.

The
PERSISTENT DISCOMFORT
of **PRURITUS**

can greatly upset the patient mentally as well as physically—not only interfering with rest and sleep, but setting up a state of tension which becomes a strain on the nervous system and a hindrance to efficient work. By exerting a cooling, soothing effect in industrial dermatoses,

NUZINE OINTMENT

overcomes the tendency to scratch—thus preventing further spread of the infection and aiding the reparative process.

Nuzine Ointment has proved its value over many years for the relief of pain and irritation in hemorrhoids and allied conditions. Its analgesic, decongestive action has now been found equally efficient in the treatment of the various skin affections which confront the industrial physician.

Nuzine is supplied in 1 oz. tubes with special hard rubber applicator, anatomically correct in design; easily removed label. Also 1 lb. jars.

NUMOTIZINE, INC. • 900 NORTH FRANKLIN STREET, CHICAGO, ILLINOIS

ELEANOR W. MUMFORD, R.N. discussed "The Nurse Aids in Industrial Ophthalmology."

In considering vision tests in industry, there is a dual approach: (1) the relationship of vision to production; and (2) the relationship of visual defects and well-being.

Emphasis was placed on the working distance, the necessity for visual acuity near and distant; stereopsis; color vision; and muscle balance.

Occupational glasses are made especially for the job, but one should not stigmatize the job because glasses are

GREETINGS—CHARLES L. FARRELL, M.D., D.M.D., PHARM. D., President, Rhode Island Society of Industrial Physicians and Surgeons; and HELENA C. MAHONEY, R.N., President, Rhode Island Industrial Nurses' Club; Director of Nurses, Gorham Manufacturing Company, Providence, Rhode Island.

"Trends in Industrial Nursing"—CATHERINE R. DEMPSEY, R.N., President, AMERICAN ASSOCIATION OF INDUSTRIAL NURSES; Director, of Nurses, Simplex Wire and Cable Company, Cambridge, Massachusetts.

"Rhode Island Cash Sickness Benefit, Its First Year"—MORTIMER W. NEWTON, Chairman, Rhode Island Unemployment Compensation Board, Providence, Rhode Island.

"Child Labor During Wartime"—S. W. HOMAN, Safety Director, Industrial Division, Children's Bureau, U.S. Department of Labor, Washington, D.C.

"The Nurse Aids in Industrial Ophthalmology"—ELEANOR W. MUMFORD, R.N., Associate for Nursing Activities, National Society for the Prevention of Blindness, New York City.

"Rhode Island Workmen's Compensation Curative Center" (with demonstration of cases rehabilitated by cineplastic surgery)—EDWARD I. FRIEDMAN, Chief, Division of Workmen's Compensation, Rhode Island Department of Labor, Providence.

"Occupational Dermatoses in Rhode Island Industries"—LOUIS SCHWARTZ, M.D., Medical Director, U.S. Public Health Service; Chief, Dermatoses Section, Division of Industrial Hygiene, National Institute of Health, Bethesda, Maryland.

"The Meaning of Industrial Medicine, Hygiene and Health"—C. O. SAPPINGTON, M.D., DR. P.H., Editor, INDUSTRIAL MEDICINE, Industrial Health Consultant, Chicago.

"Hospitalization and Cash Sickness Insurance Sponsoreed by Industry"—ORLEN J. JOHNSON, M.D., Council on Industrial Health, American Medical Association, Chicago.

SYMPOSIUM: "Reconditioning of Disabled War Veterans and Their Assimilation by Industry."

"The Army Reconditioning Program"—SIDNEY LICHT, CAPTAIN, M.C., Reconditioning Officer, Lovell General Hospital, Fort Devens, Massachusetts.

"The Veteran's Administration's Program"—HAROLD P. MARA, Vocational Rehabilitation Officer, Veteran's Administration Office, Providence.

"The State's Role in the Veteran's Future"—HARRY SMITH, Acting Supervisor of Rehabilitation, Rhode Island Department of Education, Providence.

"The Employment of War Veterans"—JOHN F. RADIKIN, Veteran's Employment Representative, War Manpower Commission.

needed for special types of work. Prescription goggles are made for working conditions only, and should not be expected to fulfill visual requirements in extra-industrial activities. In some instances, the bifocal sections are reversed because of the nature of the job for looking at work on the level or above the level of the eyes. (The bifocal section is placed in the upper portion of the lens.)

The importance of peripheral vision was noted. Visual distractions, such as glare, flashes and moving machinery, were cited as impediments to good vision and production. An illustration was given of placing light on both sides of a magnifying glass in order to avoid glare, when making examinations of eye cases in the dispensary.

A consulting ophthalmologic service was outlined, with mention of benefits both to labor and management. A foreman's record form for visual task requirements was tentatively proposed, as illustrated in the pamphlet "Analyzing Visual Tasks."

It should be remembered that the visual tests are a screening device, and that they are not expected to be entirely diagnostic.

Different instruments were mentioned, such as the Telebinocular, of which a simplified form is now being made; the Ortho-rater which was described and the service outlined; and the Vectograph, on which a report was not made inasmuch as it is now too early to give information on this instrument.

Other more familiar tests were described, such as those of Snellen and similar procedures.

In conclusion, a summary was given from the experience of DR. A. C. SNELL, in which the scope of the program was briefly described.

MR. EDWARD I. FRIEDMAN closed the morning session by presenting a discussion and demonstration on the "Rhode Island Workmen's Compensation Curative Center."

An outline of experience with severely injured persons was given together with illustrative case histories. Visits were made to Canada studying various methods, and also to the Milwaukee Craft Shop.

After a long period of study and consideration, an estate with spacious grounds was purchased and a clinic will be set up in this building. The up-keep is managed by an assessment on insurance companies.

A motion picture was shown of the cineplastic operation in DR. HENRY KESSLER'S film, and supplemented by the results of such operations in the Rhode Island experience by illustrative human cases in patients who were present for the demonstration.

DR. LOUIS SCHWARTZ spoke on "Occupational Dermatoses in Rhode Island Industries."

Occupational dermatoses constitute the majority of preventable occupational diseases, with an incidence of two-thirds of those reported. The cost is one hundred million dollars annually.

Statistics based on 41,000 cases were presented, petroleum derivatives being responsible for 18%; the alkalies for 11.7%; solvents for 7.8%; and others in smaller percentages.

Distinction was made between (1) a primary skin irritant which causes approximately 80% of the cases, and (2) cutaneous sensitizers which cause probably less than 20% of the cases. A primary skin irritant can cause irritation of any skin if it occurs in sufficient concentration and exposure is over a sufficient period of time. Among these are inorganic and organic acids and salts; alkalies; salts of irritant metals; anhydrides; and solvents.

Lubricants are of especial importance, and were classified into three groups: Class I containing the alkali coolants which defat the skin by alkali effects; Class II, the soluble cutting oils which only infrequently have a defatting action, in which the few cases are not caused by bacteria as is popularly supposed; and Class III, the insoluble cutting oils, the principal cause of industrial dermatoses because of their widespread use, and which are derived from petroleum and fatty oils. Inhibitors consisting of chlorine and sulphur are frequently

PEDICULOSIS

must be relieved *Quickly* among

WAR WORKERS

Early discovery, and immediate and effective control, are important in the treatment of Pediculosis among war production workers. Unless proper steps are taken, a single case of Pediculosis may lead to infestation of other employees.

Cuprex is a valuable aid to the industrial physician who bears the responsibility of having to discover and check any condition which may impair the efficiency of the workers under his care.

Cuprex therapy is simple. One treatment—of from 15 to 30 minutes—destroys the nits as well as the lice. Cuprex requires no messy or repeated applications, and the patient may return to his job without delay, and without embarrassment.

Literature on request

MERCK & CO., Inc. *Manufacturing Chemists* RAHWAY, N.J.

CUPREX

The Personal Insecticide

Available in 2 oz. and 4 oz. bottles

used in various industrial oils, and allergic eczemas arise from these causes.

Lantern slide demonstration showed various types of lesions, including acne on the forearms and thighs, an allergic reaction on the chest, and chloracne on the face, forearms and abdomen.

The prevention of cutting oil dermatitis is accomplished by a number of procedures: the chips should be removed from the oil and it should be sterilized by heat for soluble cutting oils and coolants; a disinfectant should not be added to insoluble oils; however, the acidity should be neutralized and gases should be removed every 154 hours — chips should be filtered out and the oil should be dehydrated.

The best prevention is cleanliness, taking various forms: clean protective clothing; good washing facilities for hands, arms and face; clean wiping cloths; compulsory showers well supervised; the use of protective ointments; and the use of ventilating machines where chlorinated hydrocarbons are employed.

In the consideration of dyes, the natural variety rarely causes dermatitis. In the synthetic dyes, most finished products containing such materials are harmless and the intermediates are also harmless. A list of fabric dyes causing dermatoses was shown on lantern slides. Dye liquors are frequently strong irritants, so that oxidizers are also irritants.

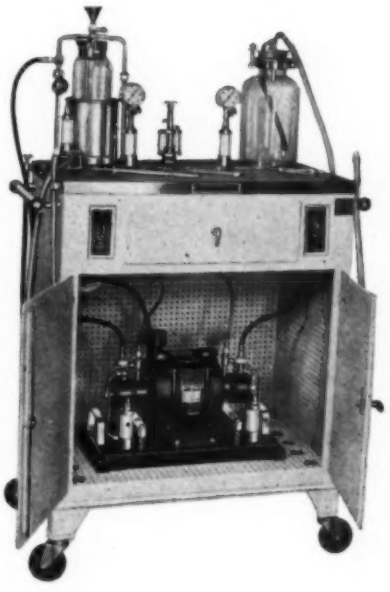
Slides were given of allergy to the intermediates, the results of dinitrochlorbenzol on the arms, and also from a mordant.

The subject of synthetic resins is a complicated one—there are so many of them that one is not able to keep up with information in respect of their effects.

Chemicals are the principal skin irritants, among these being solvents (turpentine group, esters—carbon disulphide—the chlorine derivatives and degreasers, and the petroleum solvents which are frequently irritating and frequently used).

As to rubbers, three classifications were given: Class I in which trouble occurs rarely from pure latex, but from sulphur compounds, accelerators and antioxidants; Class II in which the uncured rubbers are mostly irritating, and where among the sensitizers are certain rubber compounds; Class III in which dermatoses result from wearing certain rubber fabrics because of the use of certain accelerators and antioxidants, or from the curing method, especially with reference to sulphur monochloride.

A brief consideration of occupational leukoderma concluded this presentation.



The Bellevue Suction and Anaesthesia Apparatus was designed for continuous operation under the conditions imposed by heavy duty hospital work.

Motor unit is mounted on steel cradle suspended on four coil springs which absorb all vibration and eliminate noise. One central automatic lubrication system. A single pressure of a plunger located on top of cabinet assures lubrication during five hours of operation.

Unit is equipped with one gallon size suction bottle. Pressure and vacuum gauges and regulating valves are on top of cabinet, easy of access.

All features of the Bellevue Model are highly perfected, and the unit is *fire* and *explosion proof*.

Send for Descriptive Circular

Sold Only Through Surgical Supply Distributors

J. SKLAR MANUFACTURING COMPANY
39-04 WOODSIDE AVE LONG ISLAND CITY N Y

DR. C. O. SAPPINGTON spoke on "The Meaning of Industrial Medicine, Hygiene and Health." Industrial health is often thought of as being something new, but a brief glance at the historical milestones shows that industrial health had its origin in antiquity. The record discloses that Aristotle prescribed a diet for gladiators; that Plato studied posture in artisans; that Pliny was interested in sulphur and zinc exposures and contrived the first mask (respirator) made of transparent bladders as a protection against dust; that Hippocrates in the 4th Century B.C. was the first to recognize the toxicity of lead, and that Galen in the 2nd Century A.D. first accurately described the pathology of lead poisoning. In the Middle Ages Ellenbog (1473) made special studies of carbon monoxide, mercury, lead, and nitric acid exposures, particularly with reference to hygiene and prevention. Coming down to modern times, Paracelsus made a long study of mining and smelting effects, and Agricola in 1556 wrote his immortal book "De Re Metallica." Chief among the moderns was Ramazzini who in 1700 produced the first extensive work on artificers, also doing two other things, emphasizing the importance of the occupation in history taking, and giving an accurate description of the pathology of silicosis.

In this country, industrial health had its literature beginning in the publication of an essay in 1837 "On the Influence of Trades, Professions and Occupations in the United States, in the Production of Disease," by Dr. Benjamin W. McCready, who received $50.00 as a prize from the Medical Society of the State of New York. Only 100 copies of this were printed in the Transactions of the Society. McCready was 23 years old at this time, and had graduated two years before from the College of Physicians and Surgeons of New York.

Coming along further with our historical highlights,

the first physical examinations were done in 1906 by Dr. Frank Fulton of Providence, R. I., among the employees of a saw factory—done free of charge for the purpose of finding tuberculous workmen. Following close on this, in 1909 Dr. Harry Mock of Chicago did the first routine industrial physical examinations on employees of Sears, Roebuck and Company, Chicago.

The structure of industrial health includes industrial health administration, industrial hygiene and toxicology, and industrial medicine and traumatic surgery. Administration refers particularly to the origin and later development of industrial health, occupational morbidity and mortality, distribution and classification of industrial physicians, the industrial medical department and its scope and activities.

Industrial hygiene and toxicology refer especially to industrial health exposures of all kinds, including abnormalities of air, temperature, humidity, heat, dampness, illumination, dusts, infections, radiant energy, repeated motion, pressure, and poisonings; hygiene and toxicology also include the plant survey, with identification and control of exposures; plant sanitation and hygiene (including water supply, housekeeping, illumination, ventilation, air conditioning and noise control); personal hygiene for workers (personal service conveniences, fatigue control, nutrition, housing, recreation, mental hygiene); and, finally, the coordination of the industrial and community health services with respect to communicable disease control, waste control, vital statistics, and health and safety codes and regulations.

Industrial medicine and traumatic surgery refer particularly to the worker and the job, physical and mental phases, including tests and aptitudes, personnel relations, women in industry, the mental and physical requirements for jobs, hours, processes, equipment, and other environmental factors; a consideration of industrial accidents in all phases; likewise a consideration of occupational diseases in all phases; occupational disability, incidence, cost, classification, follow-up, and records; and, finally workmen's compensation and rehabilitation methods.

It can thus be seen that the scope of industrial health is broad and that it encompasses any procedure which has to do with the continued improvement of the standards of the health of the working population.

Lantern slide demonstration showed the different types of industrial hygiene engineering apparatus and devices used to measure air contamination; various methods of control of air contamination through exhaust ventilation, and also other methods of protection including respiratory protective devices with examples of these; illustrations were also shown for the improvement of the pre-placement physical examination in industry, pointing out certain defects both in records and procedures.

Particular emphasis was given to scientific placement, with a description and picture of the Ortho-rater which measures the visual capacity of individuals; on later work such capacities may be fitted into jobs where the visual requirements have already been determined. Allusion was also made to the recent work of the War Manpower Commission in Region XII in conjunction with the Permanente Foundation with regard to physical capacities and demands analyses.

In summary, the benefits to labor, management and medicine were briefly mentioned.

DR. ORLEN J. JOHNSON submitted a discussion on "Hospitalization and Cash Sickness Insurance Sponsored by Industry," stating that the original intention of such plans was to ameliorate catastrophic visitations.

A great deal of consideration has been given to these plans by the American Medical Association — by the House of Delegates, and the Committee on Industrial Health, and the Bureau of Medical Economics which has studied over 200 separate plans. A number of medical societies have started such plans, which may be helpful in later approaching the best type. At present there is no one plan which is acceptable and no perfect plan, although there are certain types which approach practicality in spite of complexities. Hospital, surgical, and cash sick benefits should be associated with these plans.

The extent of service depends almost entirely upon the amount paid in to the organization. The chief item of importance, however, is the isolation of the fee from the service itself, and also the fact that the service should not be compulsory.

Rx DESITIN OINTMENT
The External Cod-Liver Oil Therapy

USED EFFECTIVELY IN THE TREATMENT OF
Wounds, Burns, Ulcers, especially of the Leg, Intertrigo, Eczema, Tropical Ulcer, also in the Care of Infants

Desitin Ointment contains Cod-Liver Oil, Zinc Oxide, Petrolatum, Lanum and Talcum. The Cod-Liver Oil, subjected to a special treatment which produces *stabilization* of the Vitamins A and D and of the unsaturated fatty acids, forms the active constituent of the Desitin Preparations. The first among cod-liver oil products to possess unlimited keeping qualities, Desitin, in its various combinations, has rapidly gained prominence in all parts of the globe.

Desitin Ointment is absolutely non-irritant; it acts as an antiphlogistic, allays pain and itching; it stimulates granulation, favors epithelialisation and smooth cicatrisation. Under a Desitin dressing, necrotic tissue is quickly cast off; the dressing does not adhere to the wound and may therefore be changed without causing pain and without interfering with granulations already formed; it is not liquefied by the heat of the body nor in any way decomposed by wound secretions, urine, exudation or excrements.

DESITIN POWDER

Indications: Minor Burns, Exanthema, Dermatitis, Care of Infants, Care of the Feet, Massage and Sport purposes.

Desitin Powder is saturated with cod-liver oil and does not therefore deprive the skin of its natural fat as dusting powders commonly do. Desitin Powder contains Cod-Liver Oil, (with the maximum amounts of Vitamins and unsaturated fatty acids) Zinc Oxide and Talcum.

Professional literature and samples for Physicians' trial will be gladly sent upon request.

Sole Manufacturer and Distributor in U. S. A.

DESITIN CHEMICAL COMPANY

70 SHIP STREET PROVIDENCE, RHODE ISLAND

Among the other requisites may be mentioned: all medical features should be under the control of the medical profession; there should be no third party interfering with the physician and patient relationship; there should be absolutely free choice of physician; the confidential relationship should be retained as the dominant feature; all medical service should be under medical control; the costs should be paid for by the patient in accordance with his income; there should be no connection between medical services and cash benefits.

Services should include all legally qualified doctors of medicine.

The hospital service plans have been especially studied by the House of Delegates. These should be entirely separate from the medical service and should be rendered on a non-profit basis.

Physicians and industries should take steps to foster voluntary plans, so that eventually there may be presented a plan which is really workable. Apparently the public is not yet ready for complete coverage, for a number of such plans have failed.

It is believed that the plans as previously submitted are a partial answer to medical security; it is especially emphasized that the medical profession must take an active part.

BEGINNING the symposium on "Reconditioning of Disabled War Veterans and Their Assimilation by Industry," CAPT. SIDNEY LICHT presented the subject "The Army Reconditioning Program," the talk having been censored.

In general, however, the discussion was limited to industrial therapy and occupational therapy with illustrations and a motion picture film on occupational therapy, and emphasis particularly on the shortening of the period of convalescence and the provision of mental and physical stimuli.

MR. HAROLD P. MARA discussed "The Veteran's Administration's Program."

This consisted essentially of advice with respect to training for the purpose of overcoming physical and mental handicaps and the placing of men in such training in various schools.

It was stated as particularly important that the family physician keep records, because a number of instances have occurred where veterans have not been able to continue training or to begin training because of the absence of proper records by the family physician.

The principal function of this group is primarily with the disabled veterans.

MR. HARRY SMITH presented the subject "The State's Role in the Veteran's Future."

This plan has been in operation for 20 years, and the essential factor of it is that the cases which have not been aided in the Veteran's Administration can get help through the state plan.

The employment history is first thoroughly considered, and later other facts. After the end of 1944, arrangements will be made to do corrective surgery, with employment as the objective. Additional service will also be available with respect to prosthetic aids.

It is interesting to note that approximately 40% need only advice and counsel.

All cases are followed up thoroughly, particularly with reference to suitability on the job and the correlation of capacities and handicaps; men are serviced for an indefinite period.

A great many cases require a great deal of time and study, and constant checking to get them "on the way."

MR. JOHN F. RADIKAN concluded the meeting in a presentation entitled "The Employment of War Veterans."

This movement originated after World War I, the principal job being to know where to send veterans for miscellaneous services before employment.

This group acts as a liaison between the army, navy and hospital service, and there is aid of this kind available in all states.

Brief allusion was made to physical capacities forms—working conditions forms—and occupational demands forms—types of records which are based upon the work of the War Manpower Commission in fitting the man to the job.

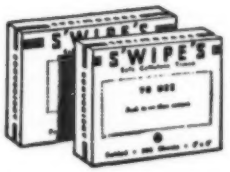
These are the essentials of a program looking toward the preparation for employment of the 30,000 to 40,000 returning veterans in the State of Rhode Island.

S'WIPE'S*

*TRADE MARK REG. U. S. PATENT OFFICE

Cellulose Wipes

In Boxes . . . In Bulk



Flat sizes, Bulk Packing: 5 x 6" and 5 x 9".

Folded sizes, Bulk Packing: 4 x 6", 5 x 6", 6 x 6" and 5 x 9".

Flat sizes, Boxed: 5x 6".

Folded sizes, Boxed: 4 x 6", 5 x 6", 5 x 9". Various packings as to sheets per box and boxes per carton.

Your Dealer can give you details or write us for price list showing Dealer's List prices.

Due to conditions beyond our control, we are not always in position to supply all items shown on our price lists or advertised herein.

Product of

THE GENERAL CELLULOSE CO., Inc.

GARWOOD, NEW JERSEY

Member, American Surgical Trade Assn., Hospital Industries Assn. and Nat'l Assn. of Mfrs.

Women IN THE HOME

Are making a worthwhile contribution to the war effort. Upon them rests the comfort of their men folk working in war industries. Anxiety for members of their family in the field is an added burden.

The mental and physical strain during the menstrual period can frequently be allayed by the use of a good antispasmodic.

Hayden's

VIBURNUM COMPOUND

Antispasmodic and Sedative in action

Literature on HVC to the medical profession on request.

NEW YORK PHARMACEUTICAL COMPANY

Bedford Springs Bedford, Mass.

Order Now!

THE MIND OF THE INJURED MAN

A Study of Trauma and the Nervous System, With Particular Reference to Neuroses Associated with Injury

by

Joseph L. Fetterman, M.A., M.D.

Assistant Clinical Professor of Nervous Diseases

Western Reserve University School of Medicine

Cleveland, Ohio

Table of Contents

Foreword . . . Preface

Chapter

I—Introduction
II—Functional Anatomy of the Central Nervous System
III—Brain Function, with Psychologic Considerations
IV—Diagnosis
V—Early Anatomic Changes and Associated Symptoms in Head Injury
VI—Late Anatomic Changes and Associated Clinical States
VII—Psychoses, and the Role of Trauma in their Causation
VIII—Paresis, Tumors, and Certain Infections and Degenerative States and the Relation of Trauma to Them
IX—Traumatic Lesions of the Spine and Spinal Cord
X—Traumatic Lesions of Cranial and Peripheral Nerves
XI—Miscellaneous Conditions: Traumatic Lesions of the Pituitary Gland; Injury to the Nervous System by Physical and Chemical Agents
XII—The Symptoms of Neuroses
XIII—The Mechanism and Meaning of Neuroses
XIV—The Neuroses Associated with Trauma
XV—Malingering and Psychopathic Personality
XVI—Treatment
XVII—Medicolegal Considerations
XVIII—Neuroses of War
Bibliography
Index

Cloth, 6 x 9, with 238 pages, 28 illustrations, bibliography and index. **Price $4.00**

Order From: INDUSTRIAL MEDICINE BOOK COMPANY

605 N. Michigan Avenue • Chicago, Illinois

—*Continued from page 561.*

dren in the city of Newburgh which, with the city of Kingston, is collaborating in the project. These communities were selected as study and control areas, respectively, after careful consideration of many sections of the state which might be suited to such a demonstration. The examinations in Newburgh are being made by the Department's Senior Dentist who plans to make dental inspections of about 1000 children in various age groups from five through 14 years. The purpose is to obtain, at the outset of the demonstration, a dental caries index which will serve as a basis for comparison with the terminal figures at the end of 10 years, the length of time which must elapse before the full benefits of the water treatment are realized. This comparative analysis will make it possible to determine any improvements which may have resulted from fluorination of the water. It is also planned to make a pediatric investigation of a representative sample of the child population, including a general physical examination, urinalysis, and x-rays of the long bones and centers of ossification. Procedures for these examinations are now being prepared and, when they are completed, a substantial portion of the child population will be examined. All examinations will be made before the fluorine is added to the water supply.

—*Health News*, June 5, 1944.

MR. WILSON: We had an interesting case in Detroit, where one concern had its contract reduced. They had quite a few women employed, and a ballbearing plant particularly needed additional employees, because, as perhaps some of you have heard, we have had a little problem in keeping the ballbearing production up to the demands of industry. The rates were five or 10 cents an hour different in these two plants. An effort was made to take the ones who were not needed in the one plant and put them to work in the other plant, but the rate was five or 10 cents lower. They wouldn't take the jobs, but applied for unemployment insurance.

—From the testimony of C. E. WILSON, General Motors President, before Special Committee on Postwar Economics Policy and Planning of the House of Representatives, Washington.

Perfect Circle Records

THE FIRST AID department of the Richmond (Indiana) plant of the Perfect Circle Company is performing an important job in reducing illness and injuries among our workers. This department was established to give service to all of our some 2,500 employees and is charged with the following responsibilities:

1. Care of injuries sustained on plant property.
2. Treatment of personal illness on the job.
3. Handling of all home cases and their return to work.
4. Home visiting.
5. Helping to prevent occupational diseases.

The nursing staff consists of seven graduate registered nurses, six of whom serve in the first aid department. Two nurses are on duty each of three shifts with one of the two serving as shift supervisor. Three clerk-receptionists, one on each shift, are important in the functioning

Prepared by the Staff of the First Aid Department, the Richmond Plant of the Perfect Circle Company; published in *Monthly Bulletin Indiana State Board of Health*, May, 1944.

COOPER CREME

No Finer Name in Contraceptives

WHITTAKER LABORATORIES, INC. NEW YORK, N. Y.

of the department. In addition, two home visitors, one of whom is a graduate registered nurse, make daily calls on absent employees in an effort to be of service to them.

A plant consulting physician is on call at all times. He spends approximately two hours a day in the plant and divides his time between pre-employment physical examinations and first aid.

Pre-Employment Physicals

EACH new employee is given a pre-employment physical examination by our consulting physician, who is assisted by one of our nurses. This examination consists of height, weight, temperature, pulse, respiration, blood pressure, history of past illnesses and operations, urine analysis, check-up on ears, nose, throat, teeth, heart and chest. A close check for hernias and varicosities is also made. A visual test is made with the Bausch-Lomb Ortho-rater which has recently been developed for industrial use. From the information secured the physician accepts or rejects the applicant. The physician makes his recommendations accordingly for the type of work which the applicant can safely do, such as light, medium or heavy machining; sitting or standing work; or work requiring no lifting, etc. This information then goes to the personnel records department where a folder (size 10x11¾) is made for the employee. This folder includes a copy of the physical plus a first aid chart (size 8½x11.) The folder is then sent to the first aid department where it is filed alphabetically.

First Aid Chart

ON THE chart a complete running record is kept of the employee for all matters pertaining to injuries, illnesses and absences. This includes all visits to first aid department, all doctor's cases and all home calls.

Every time an employee goes to the first aid department his chart is removed from the file by the clerk-receptionist who records the date and time and places the chart in the window. The window is conveniently located between the waiting and treatment rooms. The worker presents himself to the nurse, states his trouble and is given care according to established nursing procedure. The nurse records the complaint and the service given and places the chart in the proper division of the "daily service file." These divisions denote the classifications of all first aid cases as follows:

New —First visit for particular injury which has occurred on job.

Retreat—Retreatment and redressings.

P. I. C. —Personal illness cases: headaches, gastric upsets, toothaches, etc.

Home —Cases where employee goes home during working hours because of illness or other legitimate reason.

PROTECTION THAT COUNTS
LILY-TULIP
PAPER CUPS AND FOOD CONTAINERS
122 EAST 42nd STREET NEW YORK 17, N. Y.
1325 ST. LOUIS AVENUE KANSAS CITY 7, MO.
3050 EAST 11th STREET LOS ANGELES 23, CALIF.

Return —Cases reporting back to work following an absence.

At the end of each eight-hour shift the charts are removed from the daily shift file by a nurse and tabulated on a daily activity record. A weekly activity report is compiled from these daily reports. The clerk-receptionist then files the charts in the regular file except in instances where the employee has gone home. The "home" charts are placed in the "Absentee File."

Absences

AFTER each shift starts to work, the department floor clerks collect all time cards for absent workers and bring them to the first aid department. A "Notice of Absence" with two copies is made out and one copy sent to the foreman. The first aid chart is pulled from the regular file for each absent worker. These are placed in the "Absentee File" along with the time card and two copies of the notice of absence, where they remain until the worker returns. This file consists of three sections, one for each shift, in which the records are filed alphabetically.

When an employee comes to work and is too ill to work, he reports to the first aid department. A notice is sent via the employee to the foreman who in turn writes a pass which will permit the employee to leave the plant. Thus the foreman knows immediately when a worker must leave his job because of illness. The foreman notifies the floor-clerk who takes the worker's time card to the first aid department and the same procedure is followed as in other absences. Every employee returning from an absence must report to the first aid department to be checked before he is given his time card, except in instances of approved personal lay-offs. A personal lay-off in our plant is an approved absence from work for urgent and necessary reasons other than illness and may not exceed six days. If the worker is well enough to return to work, he is given his time card and a return-to-work slip which he gives to his foreman. A notation is made on the first aid chart which is placed in the daily shift file under "Return."

The clerk-receptionist on each shift compiles an absentee list at the end of each week of all absent employees, specifically designating those who are away without leave. Those who are insured and have been off more than seven days due to illness are also indicated. This enables our home visitors to have accurate information for follow-up on insurance cases.

Home Visiting

THE information secured on a home visit is recorded on a home visitor's report in duplicate. One copy is sent to the foreman who then knows approximately when the worker will be able to return. The other goes to the first aid department where the information is recorded on the first aid chart.

Standard Bodyparts Adjustment Guide

Answers hundreds of every-day questions on: Traumatic Cases—Occupational Diseases—Disability Evaluations — Medical Fees — Statutory Matters. Biennially revised by legislative years for 10 years at no additional cost. By special arrangement, $20.00.

Pruritus Ani

By Charles J. Drueck, M.D., F.A.C.S.
238 pages; 30 illustrations

Sixty per cent of the adult population is said to be afflicted with pruritus perinei and yet the bedside physician does not know how to handle it. This important book is the first comprehensive monograph on this complex and distressing affliction. Published in 1938 at $5.00—Now . .$3.00

INDUSTRIAL MEDICINE BOOK COMPANY
605 N. MICHIGAN AVENUE
CHICAGO, ILLINOIS

Mountains of mail from great war plants testify to the amazing efficiency of Lan-O-Kleen in helping to combat dermatitis—scourge of production. Tested in the fire of war-time necessity, Lan-O-Kleen has sprung to top place in many of our greatest war plants. Make this Success Story your own Success Story by equipping your washrooms with Lan-O-Kleen—the soap that cleanses *mildly* but *effectively*.

LAN-O-KLEEN* is the first industrial hand soap to provide a full measure of the double action of *effective cleansing* and proper *super-fatting* with soothing, protecting lanolin.

It removes 95% of all soils encountered in industry without injuring the skin and leaves hands feeling better, more ready for work and thus *helps prevent most occupational dermatitis*.

Lan-O-Kleen is a powdered soap of *mildly* alkaline reaction compounded with granular corn-meal which has been impregnated (by an exclusive process) with anhydrous lanolin. In its use, the lanolin in Lan-O-Kleen buffers the alkaline reaction of the soap, protecting the natural oil film of the skin and leaving the hands ready for top-speed war production.

• *Send for your free copy of this booklet.*

*Reg. U. S. Pat. Off.

WEST DISINFECTING *Company*

42-16 WEST STREET · LONG ISLAND CITY 1 · N.Y.

CLIP TO YOUR BUSINESS LETTERHEAD, PLEASE

West Disinfecting Company, Dept. 1M, 42-16 West St., Long Island City 1, New York.

Please send me further information on ☐ Lan-O-Kleen. ☐ Lan-O-Kleen booklet.

Name..... Title.....

INDUSTRIAL HYGIENE SECTION

This Industrial Hygiene Section is published to promote sound thought upon and concerning industrial hygiene. To that end it will contain articles, discussions, news items, reports, digests, and other presentations, together with editorial comments. The editorial policy is to encourage frank discussion. On this basis contributions are invited.

Industrial Medicine

Reg U S. Pat. Off.

The Editorial Committee will exercise its best judgment in selecting for publication the material which presents most exactly the factors affecting industrial health and developments for control of potentially injurious exposures. The editors may not concur in opinions expressed by the authors but will endeavor to assure authenticity of fact.

The Science, the Law and the Economics of Industrial Health

Volume 5 July, 1944 Section 3

Getting the Job Done

THE QUESTION of whether or not survey reports of state industrial hygiene bureaus should be made generally available to interested persons introduces several moot points as is evidenced by the enlightening discussion on this subject at the May meeting of the NATIONAL CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS. Indicative of the earnestness of this group in the attainment of their fundamental purpose of getting the job of industrial hygiene done, the principal criterion in arriving at a justifiable viewpoint was the ultimate effectiveness of the program.

Most prominent in the discussion was the thought that successful control of occupational disease depends upon the confidence of plant management in the governmental industrial hygiene bureau. It is management which can keep the official bureau informed on introduction of new processes or materials which may be hazardous, and it is management which makes the expenditure for control measures.

It has been well demonstrated by those bureaus which have longest been organized that the cooperation of management permits both more rapid and more constructive action than does coercion. Consequently, the handling of reports of surveys should be such as to engender that confidence and not destroy it. This means that the report, often including confidential process data, should be a private document available only to the management of the plant where the investigation was made. In fact, in one state, a statute forbids the use of such reports in any compensation hearing or court of law. In another, there have been no subpoenas in 10 years.

Much is to be said in favor of this procedure, assuming the official agency to be firm in its policy of protecting the health of the worker. But how tenable is the position of the agency when it refuses to divulge its findings to a fact-seeking compensation commission or to the worker himself or his union?

Bloomfield expresses the opinion that "Reports of the industrial hygiene agency should never be used in litigation by either management or labor" . . . . excepting "if the court needs data to determine whether certain alleged conditions really exist. Then, and only then, should the commission and court call upon the official agency to determine the facts in the case." Although Bloomfield considers that "public health agencies should be more aware of their responsibilities in this particular field," others point out that if the facts favor the claimant, industry will be more hesitant next time to call the agency into the plant. This would be particularly true where management suspects that a bad condition exists—and it is for just such a condition that the services of the agency are most critically needed. On the other hand, if the facts favor the defendant, labor will be inclined to think that the agency is in collusion with industry and, instead of looking upon the agency as its protector, will regard it with suspicion. Much depends, however, on the manner in which such a function is undertaken, and undoubtedly accepted policies on the use of survey data in litigations will vary from state to state.

Opinion is also divided concerning the information to be provided the worker and the union. It is generally agreed that management should be informed concerning the disposition of data obtained prior to the conduct of the survey, and also that a complaining worker or his union should be told that any necessary action to make industrial conditions healthful is being taken —and the agency should see to it that the condition is properly disposed of. In the interest of getting the job done, the majority opinion was that disclosure of the report itself to the worker should be denied.

With the increasing interest of labor in healthful working conditions, there is every probability that the worker and his union will make more insistent demands to be informed on the details of exposures to potentially harmful materials. Labor-management committees will be requesting studies of occupational health hazards to a constantly greater extent.

Whatever the individual policies of the state industrial hygiene agencies, so long as the primary influence is the most effective method of getting the job done, both management and labor can be assured of the sincerity of purpose of these agencies whose representatives make up the NATIONAL CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS.

INDUSTRIAL MEDICINE, Industrial Hygiene Section: Official Publication of the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION, J. J. BLOOMFIELD, President; ROBERT A. KEHOE, President-Elect; EDGAR C. BARNES, Secretary; J. B. LITTLEFIELD, Treasurer: Published in January, April, July, and October: Editor, WARREN A. COOK: 605 North Michigan Avenue, Chicago.

NATIONAL CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

—Seventh Annual Meeting—St. Louis, May 9, 1944—

Report of the Secretary-Treasurer

THE membership of this Conference at the last meeting in May, 1943, consisted of 62 members, three affiliate members, and 147 associate members, bringing the total membership to 212. Today, our Conference rolls show 78 members, two affiliates, and 201 associates, making a total of 281, or an increase of 69 members.

These 281 members of the Conference represent 38 states, eight cities, two counties, one Territory, five Federal agencies, 11 universities, and Canada.

A brief summary of governmental industrial hygiene activities for the past year, based on reports and observations your Secretary-Treasurer is in a position to know about first-hand in his official capacity in the Public Health Service, would, in essence, indicate the part which the members of the Conference played in the advancement of industrial hygiene throughout the nation.

Division Activities

AS ANNOUNCED in the February, 1944, *Industrial Hygiene News Letter*, issued by the Industrial Hygiene Division of the Public Health Service, the reorganization of the Service, effected by action of the 78th Congress, became operative on December 30, 1943. Under the new plan of administration, the present structure of the Industrial Hygiene Division, with the exception of the Research Section, is now a division of the Bureau of State Services and is one of the three divisions in that Bureau. The other two divisions are Venereal Diseases and States Relations.

Our Division as now constituted consists of a Dermatoses Section and the Field Operations Section (formerly the States Relations Section) and four units; namely, Medical, Engineering, Statistical and Chemical. The total personnel of the Division numbers 121, of whom 64 are on loan in the field.

Aid to War Department

THE Division has continued its assistance to the War Department in the inspection of government-owned, contract-operated Ordnance facilities. To date, 130 surveys and resurveys have been made in 90 government-owned industrial military establishments. Two regular officers of our Division continue on assignment with the Safety and Security Branch of Ordnance in Chicago, being actively engaged in implementing the recommendations resulting from our inspections and in promoting other phases of the industrial health program in these establishments.

The information collected by the industrial hygiene unit of Ordnance clearly indicates that this cooperative program has resulted in definite control of the various health hazards in these plants, and much has been accomplished in maintaining health at a high level and in reducing time losses from industrial diseases.

Cooperative Activities

WAR MANPOWER COMMISSION—The Division has continued its cooperative activities with other Federal agencies, notably with the War Manpower Commission, in studies of special industries in which alleged poor working conditions resulted in high labor turnover. One such investigation dealt with a study of working conditions in aluminum reduction plants located in eight states. This investigation was instrumental in effecting improvements in the working environment of some of these plants.

U. S. MARITIME COMMISSION—Another cooperative venture has been maintained with the U. S. Maritime Commission, both by our Division and many of the State industrial hygiene units. Various shipyards operating for the Maritime Commission have been inspected by state units for the purpose of evaluating and controlling existing health hazards.

Later today DR. DREESSEN will tell you of the cooperative investigation of shipyard health hazards now being conducted by our Division with the health staff of the Maritime Commission.

WAR PRODUCTION BOARD—As you know, the War Production Board has established during the past year an Industrial Health and Safety Section as part of the Plant and Community Facilities Service in the Office of Labor Production. This Section acts as a referral agency in all matters pertaining to safety and health, and has been calling upon our Division, and through us on the various states, to investigate hazards and other conditions in the working environment in order to eliminate any sources of ill health and lost time. One investigation conducted for this Section by our Division had to do with the chromate industry, while further assistance was also given in connection with logging and saw mill camps.

National Society for the Prevention of Blindness

THOSE of you who have been following closely the activities of our Division, through the medium of the monthly news letter, are aware of our cooperative program with the National Society for the Prevention

---

Tuesday Morning, May 9

FIRST Session: PAUL A. BREHM, M.D., presiding.

Worker Health Education—A Symposium:

"The Federal Government's Responsibility"—ELNA I. PERKINS, Associate Health Education Specialist, Division of Industrial Hygiene, U. S. Public Health Service.

"The State's Responsibility"—WILLIAM G. HAZARD, Acting Chief, Industrial Hygiene Service, New Jersey Department of Health; HERBERT T. WALWORTH, Chief Industrial Hygiene Engineer, Division of Preventable Diseases, Tennessee Department of Public Health; JOAN Y. ZIANO, R.N., Nursing Consultant, Division of Industrial Hygiene, Illinois Department of Public Health.

"The Employer's Responsibility"—ANDREW FLETCHER, Vice-President and Treasurer, St. Joseph Lead Company.

"The Labor Union's Responsibility"—LEO PRICE, M.D., Medical Consultant, International Ladies' Garment Workers' Union.

Tuesday Afternoon, May 9

SECOND Session: PAUL A. BREHM, M.D., presiding.

Round Table Discussion:

"To What Extent Should Official Findings Relative to Plant Conditions Be Made Available to the Worker?"—Led by KENNETH E. MARKUSON, M.D., Director, Bureau of Industrial Hygiene, Michigan Department of Health.

"The Pros and Cons of Standardization."

"In Field and Laboratory Procedure"—Led by ROBERT M. BROWN, Supervisor, Industrial Hygiene Service, St. Louis City Health Division.

"In Record Keeping and Reports"—Led by VICTORIA M. TRASKO, Assistant Statistician, Division of Industrial Hygiene, U. S. Public Health Service.

"In Setting Threshold Limits"—Led by MANFRED BOWDITCH, Director, Division of Occupational Hygiene, Massachusetts Department of Labor and Industries.

"The Interest of the War Production Board in Industrial Health"—JOHN M. FEWKES, Chief, Industrial Health and Safety Section, Office of Labor Production, War Production Board.

"The Coordination of Federal and State Industrial Nutrition Programs"—ROBERT S. GOODHART, M.D., Chief, Nutrition in Industry Division, War Food Administration, U. S. Department of Agriculture.

"A Cooperative Shipyard Study by the Public Health Service and the Maritime Commission"—WALDEMAR C. DREESSEN, Chief, Medical Unit, Division of Industrial Hygiene, U. S. Public Health Service.

of Blindness and the Joint Committee on Industrial Ophthalmology and Otolaryngology.

One of our officers is attached to the National Society for the Prevention of Blindness, and has developed an industrial eye program for the protection of eyesight among industrial workers. Recently our ophthalmologist has been making comprehensive industrial vision surveys in Connecticut, in cooperation with the Bureau of Industrial Hygiene there.

Aid to States

PERSONNEL—Most of you will recall the discussion which took place at our annual meeting last year regarding the most effective utilization of existing industrial hygiene personnel and facilities. Definite action was taken on the resolution adopted by this Conference, and, as a result of this action, certain criteria were established for determining essential industrial hygiene personnel. These were adopted by the Advisory Committee on Sanitary Engineering of the Procurement and Assignment Service. These criteria provide that a state with an industrial population of less than 500,000 would have one industrial hygiene engineer and states with greater industrial populations would be allowed two engineers when the population was less than a million, and one engineer for each additional 500,000 workers.

Those states which have not taken steps to have their industrial hygiene personnel declared essential within the provisions of this formula should do so immediately. Furthermore, recent policy adopted by the Public Health Service requires that only personnel declared essential will be permitted to retain their inactive Reserve commissions. Our Division notified the states to this effect recently.

CONSULTATION—The Industrial Hygiene Division continued rendering consultation services in the various phases of industrial hygiene. Most of the state units have been visited by our consultants in the fields of medicine, engineering, statistics, health education, nursing, dentistry, chemistry, and other features of the industrial health program. It is proposed to continue this consultation service to the full extent of our resources.

TRADE NAMES INDEX—At the suggestion of several Conference members, steps have been taken during the past year to develop a trade names index. We were able to make this a cooperative venture of the Conference and the government, receiving approval from the Bureau of the Budget for the project, and for the printing of a card on which the data may be recorded.

All of the state units have received quantities of these cards, and we urge you to furnish us with the information as quickly as possible. Just as soon as we have received a sufficient number of completed cards showing the composition of various materials employed in industry, we will be in a position to analyze this information and to prepare an index for circularization among the various state and local units. We hope to add to this index from time to time as new information is supplied to us.

SPECIAL AID—It has been possible for our personnel to assist some of the state and local units in special problems and hazards in war industries. For example, our Dermatoses Section has been able to work with some of the units in aircraft plants and in shipyards, and to conduct research work on specific dermatological problems.

Our Chemical Unit has continued its services on analysis of various materials submitted to the Division, while our Engineering Unit has assisted in special studies of toxic exposures and ventilation.

During the year we have added to our staff a Health Education Specialist and an Information Specialist, and have attempted to augment our education materials. Although we have been able to furnish the various units with a limited supply of new posters and workers' health leaflets, we are not too satisfied with our efforts and hope to do better in this field during the coming year.

We have made one innovation in connection with our workers' health leaflets in which you will be interested, and that is the preparation of a poster to accompany each particular pamphlet. During the coming year we hope to be able to develop material of the strip film variety, since we are in the process of purchasing the necessary machinery for developing our own films.

State Activities

TWENTY-EIGHT of the states have cooperated in furnishing our Division with reports of their activities.

At this point I should like to say in passing that we would appreciate it if those states which are now not reporting either through the means of narrative statements or the use of form Da would make an effort to do so, in order that the information which we need to supply to various agencies would be representative of the national picture.

At the present time there are 47 units in 38 states, two of which may be said to be inactive, employing approximately 350 persons.

During 1942-1943, 36 units in 28 states reported investigations and services to us on 11,100 plants employing 5,250,000 workers. The types of services rendered by the state and local industrial hygiene units were essentially of an engineering, medical and chemical nature. Twenty-four states now have 29 industrial nursing consultants. There are also four dental consultants in that number of states, and several other states are taking definite steps toward the promotion of dental programs in industry.

The promotion of health education programs for workers is rather limited at present. A few states are active in fostering nutrition programs, while others are giving some real assistance with in-plant feeding problems. Many of the states are cooperating in tuberculosis case-finding programs in industry. As the result of these efforts and those of the Tuberculosis Control Section of the Service, hundreds of thousands of workers have been x-rayed. Similar cooperative programs have been developed on venereal disease control work in industry.

Educational

MANY of you have no doubt participated actively in professional educational programs during the past year. Real progress has been made in informing others of industrial hygiene work and in making available educational opportunities. For example, since our last meeting, universities have conducted or are now carrying on 16 courses of study in industrial nursing and 10 courses in industrial medicine and hygiene for physicians, engineers, and others engaged in industrial hygiene work.

During the same period nearly one dozen institutes or symposia were held on industrial health. These were sponsored by state and local industrial hygiene units, the committees on industrial health of state and

county medical societies, industry and labor. Labor unions on the West Coast held two very important conferences on industrial health, while two similar meetings were held in Detroit by the United Automobile Workers.

Appraisals

OUR Division has continued its appraisals of state and local industrial hygiene programs. As you know, the main purpose of these appraisals is to render immediate assistance and advice on those phases of the program which indicate a need for improvement, while the long range objective is the preparation of a bulletin containing the best practices found in this field.

Our experience with these appraisals so far indicates that it would be well worth the time, effort, and money to make them on an annual basis. Our Division definitely contemplates such appraisals annually.

You may be interested to know of the problems and needs in industrial hygiene as determined through an analysis of 32 appraisals conducted so far in 27 states.

In analyzing our recommendations we find, for example, that the greatest need is additional personnel. Engineers are most in demand, with nurses and physicians second on the list. Apparently chemists and clerks are as yet fairly plentiful. Our appraisals indicate that in seven of the units the personnel could definitely stand additional training in the various professions represented.

Next to personnel shortages, our studies revealed that quarters, particularly laboratory space, are quite inadequate in a good proportion of the units. Furthermore most of the units need additional field and laboratory equipment.

Perhaps the best developed phase of the programs in the states deals with engineering services. But even in this instance, there is a definite need for more follow-up work in connection with the engineering studies, and certainly for more joint investigations by the medical and engineering staffs.

In seven of the units, we found a definite need for the improvement of the medical program. These improvements were indicated in connection with medical control of specific occupational diseases, and promotional work in developing medical programs to the point where private physicians would call oftener on the medical personnel for assistance in the diagnosis of occupational diseases. We found that, quite often, the fact that the medical officer was not a member of the medical society in the state or county in which he is working was a definite drawback toward furthering medical programs.

Problems concerned with stimulating or improving the reporting of occupational diseases were found to be common in all units. The promotion of programs for the maintenance of sickness absenteeism records in industry is likewise another phase of the program that has suffered because of concentrated service to war industries and because of limited staffs.

Some of the problems we encountered concern themselves with strengthening relationships with other divisions and bureaus in the health department, and especially with industrial accident commissions or labor departments, and, in some cases, with medical societies and labor-management committees.

Other problems encountered dealt with the recording and reporting procedures; the cataloging of library materials, and the expansion of the reprint collection. Some problems dealt with matters of salaries, transportation facilities, and, of course, the usual administrative relationships among the staffs.

We found that budgetary provisions were seldom made for the maintenance of a library and the purchase of health education materials. And, finally, there is a definite need to obtain state appropriations to supplement Federal funds now employed for industrial hygiene.

Although during the past year 50 cents of each dollar spent by state and local industrial hygiene units was not Federal money, this does not include the assistance given by our Service in the way of personnel and equipment. It seems to us that the programs have been in existence long enough in most of the states to have conclusively proved their worth and to merit the assumption of financial responsibility by the state and local governments.

I should like to add that through the kind assistance of several of the states it has been possible to print and distribute the Transactions for the 1942 and 1943 meetings, and we are planning to ask some of the states to assist us once again in the preparation of this year's deliberations.

It may also interest you to know that the monthly news letter started by this Division nearly four years ago at the request of this Conference, has apparently filled a want among those interested in industrial health. At the present time our circulation is nearly 2,000 and the contents of the letter are finding an increasing number of readers. Recently we inaugurated the procedure of having each state and local unit appoint a reporter, in order that we would receive on a continuous basis items of interest. I merely want to indicate once again that the quality and quantity of the news will depend on the cooperative efforts of all of us.

In closing this report, I should like to add that during the coming years cooperative programs, such as those I have herein summarized, will be instrumental in accomplishing the added responsibilities looming on the industrial hygiene horizon. During the coming year, the nation's industrial hygienists will have unusual opportunities to exercise leadership.

The future of our profession, and of the services we are prepared to give in the promotion of health, may well depend upon the extent to which we exercise that leadership.

WORKER HEALTH EDUCATION

Present Outlook among Industrial Workers

ELNA I. PERKINS,
Associate Health Education Specialist,
Industrial Hygiene Division, Bureau of State Services,
U. S. Public Health Service

INDUSTRIAL workers have probably benefited least in the annual adult health education campaigns of various national and local health agencies aimed toward informing the population regarding specific health problems. It is now generally appreciated by trained health educators, at least, that this type of publicity program does not suffice, and that intensive health education activities must be carried on among local units of the population if we expect to have effective results.

The need for establishing health education programs of suitable kind and scope to reach directly the 52,000,000 industrial workers in the nation challenges us with its immensity and complexity.

There have been many reasons for the retarded development of health education among groups of industrial workers. Among these have been the sparsity of industrial hygiene services and health education services in governmental and other health agencies, and the inadequacy of industrial hygiene programs in industries. Other hindrances have been the lack of established organization of workers in labor unions until recently, and the general lack of union interest in health matters. Fortunately all these conditions are changing and the prospects seem more promising. Perhaps we are unduly optimistic in believing that there is a general awakening of interest in industrial workers' health education. So far, however, there seem to be pitifully few attempts by any agency or group to work on the problem in such an all-out fashion as a cursory view of the size of the task shows us is needed.

Effective education in any sphere, whether it is health or something less important, requires certain essential provisions. Individuals with a knowledge of the subject are needed to carry on the program; they must have a place in which to meet groups of workers, with available time, tools and equipment.

Before knowing what these requirements will be in different situations, we shall have to apply concentrated study of the varied needs and conditions governing the conduct of health education among industrial workers. Such a study will have to be done through field experimentation within a number of different kinds of industry, fitting the program to the pattern of each industry's working organization and production operations. Other demonstrations of a community-wide nature should be made in areas where industries are massed.

Analyzing the results of these experiments, we can then recommend procedures found most practical for programs within industries, and for community programs aimed to reach industrial workers.

The Public Health Service acknowledges its own belated inclusion of health education as a coordinate part of industrial hygiene activity. During the past year, we have been having cooperative discussions in the two divisions especially concerned, the Industrial Hygiene Division and the Division of Public Health Methods, on the manner of attacking the complex solution of health education development in industrial areas. Present plans are to carry on at least two demonstrations during the coming year in industrial areas now being decided upon. The selection of these areas is being determined by a number of factors, which include the special interest and facilities of state and local health departments concerned, and the probability that the demonstrations will result in employment of health educators to continue the demonstration program on a permanent basis.

Great progress has already been made by the field staff of the Division of Public Health Methods in demonstrating the possibilities of community health education and the need for full-time trained health educators in the various state and local health departments cooperating in the demonstrations.

THE development of an adequate education program among industrial workers in any industrial area will require the combined resources of the health department, other community health agencies, labor organizations, and the medical and personnel services of industries. In undertaking these experiments we shall work through divisions of industrial hygiene in cooperation with selected industries, the labor unions having contracts with those industries and with any health agencies concerned with health problems in the immediate area.

Concentration on a few industries in a single industrial area seems to be the logical way to approach the solution of the problem.

The object of these demonstrations will be to select techniques for reaching the largest possible number of workers in order that they will receive maximum benefit from the program. At the present time, we do not know whether it is best to concentrate on applying health education programs within industry, to urge labor unions to assume major responsibility for such activity, or to reach workers through an over-all community program. Constantly changing conditions in industry, labor organizations and health department activities will give any demonstration only temporary value but at least we shall learn some fundamental principles and the present possibilities and limitations of applying health education among industrial workers.

While working on development of techniques for conduct of a program, we shall be gaining knowledge of materials needed. Production of health education materials designed to fit the special requirements of industrial use and industrial workers' needs and tastes, is a second major objective of the Public Health Service program in this field. A beginning has been made in the preparation of the Workers' Health Series pamphlets and the two series of posters designed for men and women workers, respectively. Other types of material are being planned, particularly films of short length. These could be used in many more situations that the usual 15 or 20 minute health films designed for all kinds of audiences. For example, we have recently seen an excellent film-showing program conducted during the 10 minute rest period in a plant, in which currently available Public Health Service films have been shortened to fit this time interval. Film strips with an accompanying narrative on phonograph records may be used where inexpensive projection equipment is required, making it possible to supply films on a greater variety of subjects than can be done when using only expensive motion pictures. Film slides carrying titles without sound will also serve where automatic projection can substitute for or supplement other kinds of film showings.

A third function of the Public Health Service program, in addition to the carrying on of demonstrations and the preparation of materials, is the offering of consultation services to the states. Assistance is available for divisions of industrial hygiene, whose physicians, engineers and nurses are taking on the responsibility for developing health education, either independently or in cooperation with health educators in other divisions of their state health departments. Help in the preparation of materials by the states seems to be a present need. We shall encourage the utilization of trained health educators when new appointments are being made for industrial health education consultant services in either industrial hygiene divisions or health education divisions. The recommendations on Educational Qualifications of Health Educators made by the Committee on Professional Education of the American Public Health Association provide a useful standard. Though these recommendations do not specifically mention study of industrial hygiene, a health educator specializing in this field should have some background of study relating to health problems in industry. Only recently has consideration begun to be given to this need in training programs for health educators.

Two states on the West Coast have recently employed health educators for specialized work in health education among industrial workers. These are the only states known to have provided for this particular field of service. We shall be watching these experimental developments, and will be influenced by them in determining the nature of recommendations to be given other state health departments. The limited number of health education personnel now employed in state and local health departments would seem to preclude much expansion of consultant service from health education personnel at the present time. These few health educators and their assistants are already shouldering enough if they are carrying on the preparation of educational materials, developing local community health education programs, and assisting state departments of education.

In commenting on the need for more health education workers in state and local health departments, efforts now being directed toward increasing their number should be mentioned. The Public Health Service, with the aid of a grant from the Kellogg Foundation for scholarships, has given an impetus to the training of personnel. State health officers are being encouraged to recruit and train workers for their own state, and several have already budgeted for this purpose. We shall look to the universities offering graduate training in health education for candidates for some of the positions that promise to develop in the industrial field.

It should be stated that we, too, are working with a very limited staff, and shall not be able immediately to assume all the obligations that this discussion implies we are undertaking.

THE TERM "health education program" has different meanings to various individuals, depending upon the background of one's training and experience, and the kinds of activity observed under the label. There are bound to be variabilities of approach, of content, and of method, but some fundamental concepts can at least be stated. These are based on knowledge of successful health education programs in many kinds of situations, and on proven ways of maintaining effective human relations in industry.

A basic principle underlying the development of any health education program wherever undertaken is organization for cooperative planning. Participants in the planning should include those having technical information to contribute, those who can help effect the program, and others representing the people for whom the program is projected. If a program is to be planned within an industry, representatives from all levels of the industry's organization should join representatives of the health service and personnel staffs to form a health education committee.

The democratic organization found in labor-management committees now being established in many industries affords a foundation on which a health education committee may be built.

Some industries already have subcommittees on health organized to deal with health problems interfering with production. These committees may need some reorganization if they adopt the objective of planning a continuous health education program. In industries where labor-management relationships have not been harmoniously adjusted, a health education committee might be a safe venture in cooperative activity, since a program of health education should offer a non-controversial field of action.

When a committee starts to function, its first concern will be to find out what particular health problems the workers are interested in. Then there must be a decision on the scope of the program. Management representatives may feel that the multitudinous problems of adult health education are not the responsibility of industry, or even if appropriately considered as part of the health services, that there is too little time and opportunity to give them attention. Management, on the other hand, may realize that it has a practical interest in the matter and take the initiative in suggesting that the contemplated program be of widest possible scope. There is no doubt that management will accept its share of responsibility for the workers' instruction on their self-protection against industrial health hazards.

A program that presents practical information on adult health problems can be expected to effect changes in everyday practices, as has already been shown in improvement of food habits through nutrition education programs now being carried on in industry. The content of the health education program will invariably include information on the plant's medical service, together with related information on community health services available.

THE CHOICE of methods to be used in reaching individuals and groups is the second problem the committee will need to consider. Methods have to be adapted to the particular limiting conditions found in each industry. Those found useful in one industry may have no place in another.

Methods of health education consist of use of visual media, including films, film strips, slides, posters, and exhibits; auditory devices, apart from films; individual counselling; and group meetings. Present health education methods commonly used in industry include the display of health posters; articles in the plant newspaper; talks over sound systems, or in training periods; showing of films during lunch hours; and counselling by physicians, nurses and nutritionists. Less frequently, class instruction is offered on nutrition, home nursing, or personal hygiene. Responsibility for these varied activities is sometimes found to be divided among the medical and nursing staff and the personnel department without any coordination of planning.

These sporadic activities obviously need to be tied together, with simultaneous application of the several methods.

A health education committee will find that material available from health agencies or commercial sources does not adequately meet the needs of its particular industry. There are several possibilities for the solution of this problem. The industries may be encouraged to assume the entire cost and responsibility for producing suitable materials, the industries and the labor unions concerned may share the cost and the responsibility, or the industry may pool its funds with other industries in the community leaving the responsibility for production with the health agencies sharing in the plan.

The type of educational materials needed will be determined by the health education committee's inquiry directed toward the workers' health problems. For example, the committee may learn that a film or printed material is needed to explain to the employees exactly how the industry's medical service functions and how it cooperates with private and community health agencies. Short films and other materials will probably be needed to help the workers understand how to protect themselves from the occupational hazards of their jobs and how to cooperate in good housekeeping in the plant.

An additional responsibility, that could properly be assumed by management, is the preparation of films concerning hazards occurring in the distribution as well as the manufacture of the product. There is a dearth of films on occupational health hazards, which could be overcome if industries would undertake production of these films, individually or by cooperative pooling of funds by industries engaged in the same kind of production. Industrial hygiene agencies can not be expected to meet the extensive need for this form of educational material with their present limited resources.

Many war industries are now giving time for "incentive programs," with showings of war films especially prepared for industrial workers, pep talks by men in the armed services, and other inspirational features. These not only build morale, but also serve the healthful purpose of relieving the monotony of work.

Inspirational and educational programs planned for the definite purpose of increasing the worker's appreciation of the world outside, should have a place in peace-time industry.

It is not visionary in these days of postwar planning to foresee a complete adult education program being offered to workers in industrial plants as well as in other places of work, using the same methods now found effective. Films, talks, and dramatic presentations concerned with the activities of the world we shall be living in can offer peace-time incentive to workers and have incalculable effect in broadening their mental horizon. Health subjects could be included in this general educational program to reach those who have neither interest in health classes nor a chance to take them.

An expert educational director having responsibility for this entire program could work in conjunction with the labor-management health education committee and the industry's medical department.

Looking ahead to the return of some leisure when there will be opportunity for more adult education in all practical and cultural subjects, labor unions will be expected to assume their share of the responsibility for education of their members on health matters. Labor unions in a few states have held health institutes during the past year, with major interest centering on nutrition, legislation for medical care programs, and cooperation with public health agencies including industrial hygiene services. These institutes indicate an awakening of interest in planning for health education programs in local unions. Unions should promote health education that will help individual members to improve their own hygienic habits of living and to take advantage of health services available. Thus, members may be helpéd to make more judicious use of medical care and public health services through union health education programs adapted to local conditions.

In presenting here some of the problems and possibilities in industrial workers' health education, specific examples of programs now under way have been purposely omitted, since the speakers to follow will give definite reports of experiences.

The responsibilities of the Public Health Service have been presented as we see them. Your reactions to these statements of our objectives are desired. Are we failing to help meet your emergency needs while postulating a program for long range action? Our purpose has been to suggest that industrial hygienists in governmental agencies have abundant opportunities in their everyday work to advise industries and labor unions on needs and potentialities of health education as a part of health service and educational programs.

The State's Responsibility

W. G. HAZARD,
Acting Chief, Bureau of Industrial Health,
State of New Jersey Department of Health,
Trenton, New Jersey

HEALTH activities are carried on by state governments for one fundamental reason: to reduce the amount of sickness in the public at large. Historically and currently these activities are "good business" for our citizens, because by moderate expenditures towards prevention and early diagnosis of disease, the staggering tax burden of institutional care for the sick, the blind, the physically helpless is lightened. The keynote of state health work is: invest a little *now* to avoid a huge tax bill *later*.

In this drive to cut the spread of disease, health education is one tool—and a potent one. We may find no chapter in the statutes that directs our department to carry on health education as such, but nevertheless we have an administrative obligation to use this implement along with every other effective implement for bettering the public's health. Health education is not an end in itself, but a means towards an end; it is not so much a responsibilty of the state as an opportunity.

A state has no more responsibility to educate industrial workers in health than it has to educate school children, parents, farmers, civil servants, or any other social or vocational group. It happens, however, that the industrial group through its high state of organization makes up a congregation that can be reached conveniently.

The words "worker health education" have a bookish, school-room aroma that leaves the industrialist cold and the employee irritated—for who wants to be told that he needs to be "educated"? We have found that "health promotion" and "health information" are more pleasing and more descriptive terms, and they will be used in the remainder of this discussion in place of "health education."

Health promotion may be tackled by the state bureau in two ways: either the state may carry its message directly to the worker, or it can stimulate various intermediary organizations that will in turn pass on the message to the ultimate Individual worker. In the field of merchandising the first technique would be called direct consumer selling, and the second, selling through dealers or jobbers.

The average state unit knowingly or unknowingly, is actually practicing the "direct selling" of occupational disease information every day. Our physicians, nurses and engineers are regularly making plant visits, and, although the purpose of these is not primarily health promotion, that is often their end result. Our service is tailor-cut to meet the particular hazards of each separate plant.

In the "direct selling" of *general health* to the *individual* worker, however, we have accomplished little. Nor do we see how our present budget and staff can ever do much here. National advertisers say a product must be displayed, a trade mark flashed or a potential customer visited again and again and again, before a sale is made. With a budget of a few thousand dollars and a staff of a half dozen specialists—none of whom is a specialist in advertising, publicity, or health merchandising—our product, health, can never be sold *directly* to more than a handful of our state's two million employees. To be sure, we might have enough money to print one leaflet a year that would go to every worker in the state, but one such firecracker would not help win the war. If we were to

supply leaflets at cost, they would have limited, perhaps insignificant circulation. Even if money were available for free distribution of materials to individuals, it is a glaring misconception to think the way to promote health is just to "make some posters" or "get out a pamphlet." In some cases they may help. But in others reliance on them is almost ridiculous. You have to know *what* you are fighting before you can decide *how* to fight it. Many problems are such that even the most brilliant posters and leaflets can't possibly touch them.

If the problem is one that promotion *can* solve, the hard-won budget will be frittered away unwisely should our health propaganda be sprinkled among *all* workers, both those who need it and those who do not. Many studies have shown that a plant's sick absenteeism is concentrated among a relatively small portion of its population—which is off the job repeatedly. These are the ones on whom to work. It is wasteful to include those who do not need the health advice. And maybe the best way to work is through individual consultation between the employe and the plant physician and nurse. Many, many plants have no medical program at all—for such health promotion work. Clearly, the state agency cannot conduct such consultation between employee and physician on general health matters. What it can do, however, is to stimulate each plant to set up its own medical program. This is one of our biggest openings in health promotion. It is the core of the activities of any state industrial health unit—and yet we have barely scratched the surface. There are still many, many more plants with *no* medical program than there are *with* one.

More promise comes from selling both occupational disease and general health information indirectly, that is, through intermediary organizations which in turn can spread the word among their own members. We don't, and can't, supply materials for all the members, but simply feed ideas to their leaders and let them carry the ball. Some of the organizations with which we can work are other state bureaus, local federal offices (such as branches of the WPB, WMC, WFA, Maritime Commission, etc.), community agencies, management organizations, labor organizations, labor-management committees, professional societies and other groups.

Some interesting developments are under way. One type of group program is the Fort Green-Bedford plan mentioned by MISS PERKINS. Another activity is training courses for physicians, safety directors, and other personnel in which the staff of the state industrial hygiene unit does the instructing. In New Jersey, for example, there are now five such 60-hour courses in progress in industrial hygiene engineering, with over 120 enrolled. A third development in health promotion is with the educational departments of labor unions. And a fourth is with labor-management committees.

The latter, labor-management committees, we believe, hold especial promise as loudspeakers for the industrial hygiene unit. Basically, the committee structure is sound, for it is the employee on the job who is often more aware of the plant's health hazards than the front office executive. An effective labor-management committee, through a subcommittee on health, can be a channel for bringing to light these occupational conditions. At the same time, it can be a means for disseminating general health material.

However, real accomplishments in health by labor-management committees, measured statistically, are still apparently rare. We are now examining all such committees in our state. They number 192. We have information here on 65. Of these only six or 9% have subcommittees on health, although 26 or 40% have subcommittees on safety. Thus 51% have no labor-management committees on health or safety. These unimpressive figures on labor-management health interest, we believe, reveal unrealized opportunity for worker health programs to develop, rather than failure of the committee plan as a suitable technique.

The best way to promote anything, health included, is to get lots of people talking about it, thinking about it, and doing something about it. And the best way to accomplish this is to get a large number of people active, through committees with rotating membership, where they will make decisions and share responsibility. If anyone doubts the effectiveness of this techniqu, look at the Community Chest campaigns and Red Cross drives, which succeed not because of speeches or oratory, but because a large section of the citizens get active, personally assume some responsibility and ring doorbells. Worker committees likwise can put a health promotion program across.

TO SUMMARIZE: Health promotion is a tool which the state department can well use in carrying out its main responsibility of reducing disease among the public. To reduce disease is to reduce institutional cases—and that means great savings in tax expenditures.

The industrial population is a fertile field for health promotion because it can be more readily reached than the random passerby on the street.

Health promotion can neither aim directly at the worker, or indirectly through some intermediary group which in turn distributes health knowledge to its members.

State units practice the direct selling method in their daily visits to plants and in their recommendations to set up a plant medical department where one does not now exist. Their first concern is occupational disease information. They can do scarcely anything with present budgets towards promotion of general health directly among workers.

General health can be promoted by the state industrial health unit, however, by selling it to intermediary organizations such as community health councils, professional training courses, labor union headquarters and labor-management committees. The latter offer a genuine opportunity that most of us have not yet cashed in on.

From the Viewpoint of the Engineer

HERBERT T. WALWORTH,
Chief Industrial Hygiene Engineer,
Tennessee Department of Public Health

DURING the development of official state industrial hygiene programs, little attention has been focused on worker health education. Not until recently has serious consideration been given to this activity. Our efforts in education have been directed principally toward management and certain professional personnel who have or will have responsibility for health programs in industry. If we accept such educational programs as proper functions of industrial hygiene units, why should we disregard the industrial worker—the person whose health is directly involved?

The principle underlying the assumption of responsibility for the maintenance of industrial health by state government can be stated as economic; that is, states are interested in applying preventive procedures to preserve worker health, with the result that costs to the state for welfare, relief and hospitalization may be reduced or avoided. In practice many states have

adopted the procedure of offering plants counsel and assistance regarding industrial health problems and are depending upon the plants, having a desire, to do something about them. In general, these procedures have proved successful, but can we say we have completely discharged our responsibility if the workers in these industries are not sufficiently informed in health matters to take advantage of the improvements made?

Many industrial hygiene engineers have encountered the situation in which sound counsel, enlightened interest and good cooperation have moved toward the solution of industrial health hazards only to find those efforts nullified because of failure of the worker to accept and appreciate the improvement. The worker who fails to use the exhaust hood provided him in his welding job and the worker who does not follow instructions in operating a degreaser are typical examples of sabotage of the long range health program. While we have no way of measuring the prevalence of these situations, they are undoubtedly widespread.

The remedy for failure of workers to cooperate in an industrial health program, is health education. This tool can be used profitably by industry to protect its investment in the worker and in the control equipment provided, by labor to improve the health and economic standards of its members, and by the state to reduce welfare, relief and hospitalization costs.

Worker health education may originate from several stimuli; namely, industry, industry associations, insurance companies, labor groups and government agencies. Industrial hygiene has been accepted as a proper function of state government, and therefore, it naturally follows that industrial hygiene units have a definite responsibility in worker health education. The activities of these units may be divided into three separate functions: first, the promotion of worker health education among labor groups and industrial plants; second, assistance to both of those groups in the conduction of their programs; and third, cooperation with local health departments in their education programs. Assistance to industry and labor should involve the provision of technical information, suitable educational materials and direct participation whenever indicated. Responsibility of the industrial hygiene service to the local health department is stimulation of and assistance in the general worker health education program.

The problem of control of non-occupational diseases which involves both education and service activities, was a subject discussed to a limited extent by this group in 1943. While it is not the purpose of this discussion to consider the administration of industrial hygiene programs in detail, we should not overlook the fact that the industrial worker spends more than two-thirds of his time in the community in which he lives and, therefore, the problem presented by non-occupational diseases is one accepted by the local health department. However, the administration of industrial hygiene programs at the state level has proved successful because the environmental sanitation phases which require personnel having specialized training, cannot be economically administrated on a local basis, except in cases of concentration of industry in large cities. For these reasons, the most practical solution to the problem of responsibility for general worker heath education is the development of programs at the state level in cooperation with the local health department.

The relationship of labor, industry, and the state agency in worker health education will depend upon the degree to which individual programs have been developed. Where labor organizations and industries have developed educational programs, the industrial hygiene service should be available as a counseling agency and should provide direct assistance where needed.

It is generally known that industrial plants employing more than 500 workers provide more complete health facilities than do the smaller plants. Many of the larger plants may have health education programs and the possibilities for promoting successful programs in this type of plant are greater than in the smaller plant. However, more than 50 per cent of the workers in the manufacturing industries in the United States are employed in plants having 500 or less workers. State agencies have an important responsibility to this group since the industries in which these workers are employed do not offer extensive health facilities.

There will be difficulties in reaching these workers on a continuous basis except through general health education programs. Absence of genuine interest by a responsible official in the small plant may require more direct participation by the industrial hygiene service. However, it would be almost impossible to carry the entire burden for small industry since participation by the state agency has certain limitations. In the small plant, we cannot expect results in worker education without education of management. To accomplish successful worker education in this type of plant, I believe it is necessary for a plant official to accept responsibility for the program. An interested part-time physician, safety engineer or personnel director can render invaluable aid in providing the missing link.

A discussion of worker health education would not be complete without some mention of its effect upon labor-management relationship. When, through educational procedures, a desire is created for better health it then follows that a demand may also be created. It is reasonable to assume that a worker who learns to take advantage of health protection in one industrial situation, will demand the same protection if he should transfer to another plant not providing this protection. However, experience has shown that usually better relations exist between labor and management in plants having good health programs.

Perhaps the point can better be illustrated by relating briefly a personal experience in which worker health education had a direct influence on the improvement of labor relations: During a series of engineering studies in a coal mining district, it developed that the plants were not receiving cooperation from the workers in maintaining proper ventilation at the working face. Simultaneously, the workers were complaining that the plants were not providing healthful working conditions. This situation had existed for some time and as the studies progressed, the need for worker education became evident. For this reason a program consisting of talks, demonstrations and movies, was presented before local union groups. Later, the idea was extended to state-wide union meetings. This procedure proved beneficial during the conduction of the studies and resulted in better relations between labor and management.

THE ACTUAL procedures for conducting engineering investigations in plants will vary from state to state and, in fact, individual procedures within a state will vary in some respects. Regardless of these differences, the conduct of the engineering phases of

the industrial hygiene program should offer excellent opportunities for worker health education. As soon as the plant study is under way, opportunities for education are presented. The long accepted policy that industrial hygienists should not discuss the plant study with employees, is not practical. If a worker is interested enough to inquire as to what the industrial hygiene study is about, he should be shown the courtesy of a concise and uninvolved explanation. Certainly the uninformed worker will not have any great desire to cooperate in your or the plants efforts for maintaining a better working environment. After the study has been completed and measures for the correction of harmful environmental conditions are installed, the importance of continuing worker education cannot be overemphasized.

During the investigation, the education program should solicit the worker's cooperation and give him an understanding of the purposes and objectives of the study. As control measures are installed, the program should inform him of the purposes of these measures and the part he can play in maintaining a healthful working environment for himself and his fellow workers. The net result of such a program may be the creation of a desire for better general health for himself and family. A worker health education program, coupled with the environmental study, can build the foundations of a continuous program in which workers may actively participate.

I shall not attempt to outline a worker health education program but I will mention certain factors which should be considered. It would seem logical to start the program on a pilot plant scale and expand as methods and procedures are evaluated. The program should be designed to bring the health information to the level of the worker on the job. Wherever possible, interest and cooperation should be solicited among labor groups, as active participation by workers should go a long way toward developing the interest needed. The following statement which was made before this group in 1941 is repeated to emphasize this point: "If you are neglected by the sponsors of any project in which you feel you ought to be a part, you are apt to become more or less hostile toward it."

In accepting responsibility for worker health education, we should not overlook the fact that such a program at the present time will have considerable competition. During the past few years, many extensive campaigns have been directed toward education for various purposes. In these campaigns every known trick and selling method has been used, probably with both success and failure. We should benefit from the results of these campaigns in so far as they are applicable to this type of education.

THE selection of materials to be used is a problem which must be given serious consideration. In my opinion, the preparation of educational material, with certain exceptions, is not the responsibility of state industrial hygiene units. Such materials as posters, pamphlets and movies should be prepared by those familiar with the fundamentals and techniques involved. We should look to other agencies and organizations for assistance in this field, and we should expect quality in preference to quantity. The U. S. Public Health Service, industry associations and private organizations are better equipped than the state agencies to provide the materials needed. We should solicit suggestions and guidance from persons with experience and training in health education. We should also look toward unification of effort so as to prevent general confusion, which would undoubtedly result if all agencies interested in the subject promoted their programs independently.

We are familiar with the common types of health education materials and there should be little need for reviewing these in detail. If good materials are available, the method of distribution and presentation then becomes the important problem; and one which requires careful planning. Promiscuous distribution of posters and pamphlets is certainly not the answer.

Our needs for materials in this field of education are probably many. I should like to suggest the following as materials deserving consideration for future development:

1. The color cartoon movie.
2. The cartoon strip (popularly referred to as comic strip).
3. The single cartoon.

Materials of this nature have a popular appeal and if properly prepared they can be used to advantage in discharging our responsibility in this field.

The use of plant and union newspapers and publications for articles on worker health is an educational approach frequently not used to full advantage. Use of the motion picture which has proved to be an effective tool in educational procedures, should be increased. Opportunities for the presentation of movies during the lunch period, and of talks during lunch or rest periods over plant loud speaker systems, should not be overlooked.

In conclusion, I should like to leave the thought that worker health education cannot be accomplished in a short time. The programs will require careful planning and conscientious effort and they must be conducted on a continuous basis. It is my hope that from this symposium added interest and greater activity in worker education will result and that this Conference will take the lead in developing a coordinated program with labor and industry.

The Viewpoint of the Nurse

JOAN Y. ZIANO, R.N.,
Industrial Nursing Consultant,
Illinois Department of Public Health

A CHAIN is only as strong as its weakest link." The weak link in today's industrial health chain is health education.

The keynote in industry today, for both skilled and unskilled labor, is increased production, with a premium placed on output. The war urge and the high economic rewards make for an emotional recklessness. The results in accidents, illnesses and maladjustments must also be considered as industrial war casualties.

The fundamental basis for action against this situation is information through a thorough and far reaching worker health education program.

It is of importance to find devices that will shorten the time lag and close the gap between existing knowledge and newly discovered facts and their practical use by our civil and industrial population.

A successful educational program, whether it is conducted on a year-round basis or as a specialized campaign, requires both sound plant and community health and welfare relationships. Health conditions and findings in a community are reflected throughout the plant. The workers should be considered both as members of the community and as individuals.

A survey of the health and welfare needs of both the plant and the community and a clear visualization of the problems is imperative. To tuck the results in a file and feel that the job is completed is useless; in

other words do not develop the habit of making the survey of health needs a springboard from which one rarely springs.

The object of any health program is to help each person realize his own needs and to gain knowledge which will lead to a desire to participate, which, in turn, will lead to desirable attitudes toward health and form better habits of living.

The responsibility for good health rests ultimately with each individual. Unless he desires good health and strives for it, he fails, and the health of the group suffers.

As so many planned economies fail because of their limited scope, health planning and teaching should be broad and all inclusive. It must include every factor that affects the lives of people. Our health ideals, then, include not only physical fitness, but mental and emotional health as well.

In industry, the problem of *adult* education is pertinent. Here the problem is complicated by reason of the fact that adults usually are not as open-minded to suggestions and changes as are the younger people. People who have "gotten along" for some 20 or more years are prone to wish to continue in the usual way. Attempts to high pressure health and social consciousness in people's minds will end disastrously. This sort of consciousness is never lasting—and merely results in a temporary state of mind.

Before a permanent consciousness can be affected, people must be *informed* in such a manner as to fully *understand* the purposes and the program. Information and understanding are the key stones to lasting results.

Health information used should always have a scientific basis. Materials should be kept up-to-date and the importance of using attractive eye-catching materials should not be underestimated.

The program should start at a level which best fits the immediate needs of your own plant and community. The efforts of other forces in the same or similar areas of endeavor may be *supplemented*, but *need not necessarily be duplicated*.

The cooperation of forces in your area of endeavor should be cultivated. The interest and cooperation of other health and welfare agencies is not secured purely by virtue of their existence. Here, too, is a job that needs careful consideration.

It is necessary to avoid a tendency to either over-educate or under-educate certain segments of your plant and to neglect the minority groups. The minority groups may bring special problems and require a more intensive and extensive technique of education. This is a challenge! Participation always stimulates genuine interest.

Organization and program development requires courage. Rather than waste your time, money and efforts on insignificant procedures, the results of which will not be far reaching or permanent, it is better to set up one definite long range goal. It is not inferred that the goal should be so idealistic as to be unattainable, but even a practical, conservative plan can have a large, long range purpose. It is generally found that your following and the general public interest will be greater if this principle is followed. The real job is done at the plant—at the grass roots—through cooperation with national, state and local official and non-official health agencies. The problems can be viewed from all angles. However, the details must necessarily fall to the—grass roots—each person must be reached as a person, since emphasis is no longer placed on mass education.

The immediate concern is with the opportunities and obligations that may exist for education in the industrial health field as reflected in the several approaches incorporated in this symposium.

My concern today is with the role played by the industrial nurse, assuming in this instance, that she has been delegated the responsibility of leadership in the worker health education program.

One of the first steps to be taken is to stimulate in management an awareness of the existent health problems and to motivate purposeful participation on their part. Coincident with the program for workers necessarily must go the program for management. This is a far more difficult program. It is a challenging problem to offset the negative influence of the indifferent or uninformed head who can either vitalize or deaden a program.

The program must be broad and coordinated, with every member of the plant organization thoroughly sold on health and working in harmony for the good of the individual. Although the educational activities related to health should be coordinated in one program and under one leadership the success of this program can never be just one person's job. Coordination and full use of the other departments in the plant is necessary, since the best results cannot be achieved without the enthusiastic and conscientious support of the department heads who come in daily contact with the workers.

The industrial nurse, if so delegated, and with the guidance of the medical director, part-time physician or "on-call' physician assumes the responsibility of planning and inaugurating the program, getting it to the workers, and securing adequate materials, and the cooperation of the various groups.

In the small plant, the health education method used most frequently is that of the personal interview. The pre-employment and the periodic physical examination may be used as the cornerstone of the plant health program, with its many opportunities for the follow-up of remedial defects. The individual health record card is revealing as to many causes of illness and absences.

Maladjustments caused by personal and family health problems are also given consideration through interview with the individual worker.

Health education by group instruction is another method used. To insure success, it is usually necessary that such a program be conducted on company time. Heavy production schedules have made this impossible in most plants today. In some instances, the forum meeting in which everyone is invited has formed the nucleus for health education. Foremen and shop stewards, the safety and health committees or union meetings may be utilized. These evening meetings may be held monthly in conjunction with a subsequent recreational program. During months designated for health information, the chosen topic is discussed by the physician, nurse or by a guest speaker, for approximately 30 to 45 minutes, with some time left as a discussion period. Motion pictures can be used here effectively. The suggestion boxes, located in the departments throughout the plant, may be used to discover the needs of the workers and the material they wish covered. The subject to be discussed is given wide publicity in the plant house organ, and the workers are also encouraged to use the suggestion box for questions they wish answered during the discussion period. Health literature pertinent to the subject discussed should be available in the library of the recreation room and attractive posters arranged for illustration. Literature is available through Federal, state and local official and non-official agencies and insurance com-

panies, etc. Some large plants issue their own health literature.

In one plant the public address system is used effectively for dissemination of health information. A series of pertinent, appropriate and catchy announcements are prepared by the medical department and used in rotation. Three or four cards of the series are read each day by the telephone operator. The medical director feels there is a great value in repetition. These cards are simple, non-technical, direct and brief and are at the most composed of two sentences, taking about 10 seconds to read. This method has greatly facilitated the progress of health education being carried on in this plant. Some of the subjects covered so far have been:

1. Prevention and care of the common cold.
2. Fatigue.
3. Dental Health.
4. Nutrition.
5. Tuberculosis.

One of the most effective health education programs observed so far in a large Illinois plant, has been that carried on by the supervising nurse of Sears Roebuck and Company (mail order and warehouse), Chicago. There are approximately 10,000 to 12,000 workers involved.

The nurse, because of her genuine interest in health education, was given an opportunity by the Illinois Department of Public Health to attend an accredited university for work in public health. Upon her return to industry she inaugurated a course outline for teaching advancement of health to workers. After careful planning, this outline was submitted to management for approval. Management, after much discussion pro and con, found the plan acceptable. A conference was then held with the various department heads and the program explained in detail. The plan met with approval and their full cooperation was assured.

A large, attractive and well ventilated room near the medical department was designated as a conference room. The room was well equipped, consisting of comfortable chairs, wall space for posters, a large blackboard, and a movie-soundie unit for the showing of 16 millimeter sound or silent films. The original cost of this movie sound equipment was approximately $675.00. It is most desirable because it is self-operating.

The health education program about to be inaugurated was given wide publicity in the plant house organ.

The department heads made the workers feel that attendance was a privilege. The selection was accomplished more or less through the volunteer method, two workers being chosen from each department.

The program began with the selection of 200 employees divided into groups of 40 each. One class lesson was to be held for five days a week for 16 weeks. Classes were conducted on company time, beginning at 10 A.M. and lasting for 45 minutes, the last 15 minutes being used for discussion. Each subject was taught as a unit and broken down into a daily lesson plan. The lessons were taught in terms familiar to the level of the group with the object in mind to meet the present needs of the workers and the community. Classes were taught by the medical director, nurse, and by outside guest speakers, who specialized in their respective fields.

Some of the subjects included in the health education program were:

1. *Use the plant medical department.*
2. *Nutrition:* (a) Choice of foods; (b) family budget; (c) meal planning, etc. Some of the classes were taught by the Nutrition Consultant of the State Department of Public Health. A survey was also made of the cafeterias in the plant to see that well-balanced meals at a reasonable cost were offered to the workers.
3. *Communicable disease control:* (a) Common cold; (b) pneumonia; (c) infantile paralysis; (d) any recent or present epidemic was discussed.
4. *Health and accident hazards:* (a) Occupational hazards on the job and means of control; (b) safety practices in particular jobs, and other hazards such as fire, traffic accidents, etc.; (c) non-occupational diseases and means to prevent sickness or to bring about a speedy recovery.
5. *Personal hygiene:* (a) Rest; (b) sleep; (c) recreation; (d) cleanliness; (e) posture, etc.; (f) feet.
6. *Dental hygiene:* A list of 35 true and false questions were submitted by the Dental Consultant of the Division of Industrial Hygiene, on home care of the teeth and gum treatment, general operative and repair work on teeth—diet—development and growth. Dental films were shown by the Dental Hygiene Institute of Chicago.
7. *Community resources:* Health and welfare.
8. *Mental Hygiene.*

Literature pertinent to each subject was distributed to the workers at each lecture and the posters changed accordingly. Some of the various sources of literature were the official and non-official agencies—Federal, state, or local.

Upon completion of the fifth lecture a survey was made to determine whether:

1. Benefits were being derived from the classes.
2. If the classes met with their expectation.
3. If the employees wished the classes continued.
4. Subjects they wished discussed in the future.

From the answers derived from the survey, it was interesting to note the interest and benefits that had been derived and the many subjects requested for discussion at a later date. One worker took notes of all the lectures and had copies of each mimeographed for the other 60 girls in her department. She also wrote to the various agencies to obtain additional copies of the literature that had been distributed at each lecture.

The health column in the plant house organ was used for discussion of current health topics not covered in the class.

Although only one session of the lectures has been completed to date, the results have been far reaching.

Since then a chest x-ray program sponsored by the Chicago Municipal Tuberculosis Sanitarium, taking 4 x 5 films, has been conducted on a volunteer basis, with a high percentage of workers taking advantage of the program.

Management has now consented to include a blood test in the pre-employment physical examination. The Chicago Health Department has cooperated by setting up a clinic in the plant and offering blood tests to all the workers on the job, having already had pre-employment examinations.

In conclusion, no attempt is being made in this brief review to record the measure of progress toward a set goal. It is believed, however, that rapid and telling progress is being made in the program of worker health education. We should continue to expand our efforts to meet the needs, firm in the belief that, in days to come, when thousands of workers return to their homes, the information they have acquired in industry will be of value far beyond the immediate needs.

References

"Health Education on the Industrial Front."

Health Education Conference of the New York Academy of Medicine. Columbia University Press, New York, 1942.
"Functions of the Civilian Medical Division, and Description of the Health Education Program."
Office of Secretary of War (Civilian Medical Division) January, 1944.

The Employer's Responsibility

ANDREW FLETCHER,
Vice-President and Treasurer,
St. Joseph Lead Company,
St. Joseph, Missouri

IN CONSIDERING the employer's responsibility toward workers' health education, it would seem that it is first necessary to decide whether or not it is worth while for a worker to receive health education.

Time Lost Through Illness

IN ACCORDANCE with the U. S. Public Health Surveys, it was found that, in a 12-month period, for every 1000 persons employed, there are approximately 114 absences of seven days duration or over—in other words, for every 1000 employed, 114 absences occurred of one week or over. The yearly figures also show that for every 1000 persons employed, there are 1000 absences of one day's duration or over, and that for an average year the ordinary male worker spends seven to 10 days off the job because of illness, and a female 12 to 14 days.

In the United States there are now approximately 50,000,000 people employed. With each losing between seven and 10 days per year, or say eight days, the days of lost productive labor can be assumed at around 400 million. Assuming an average wage of $6.00 per shift, the direct loss in wages is certainly over $2,000,000,000, and this does not take into account the indirect expense which is incurred when an employee is ill, through the interference with production, the loss of profit on the employee's productivity, or the overhead cost which continues on the idle equipment while the employee is non-productive.

Death and Accident Loss

ACCORDING to the data recently issued by the Office of War Information, it would appear that 65,600 persons have been killed in industry from Pearl Harbor to January 1, 1944, which is more than the military casualties for the same period. Two hundred and ten thousand workers were injured, which is also considerably more than the number wounded in the battle fronts. According to the same agency, it would appear that 50,000 workers are absent every day from United States industries because of accidents or injuries, and further that the deaths and injuries on the job are at the rate of 270 million lost man-days a year—or the equivalent of 900 thousand workers from production lines.

General Health

THE rejection of 30 to 33% of the available manpower by Selective Service because of physical defects is certainly a reflection on the general health of our population.

It is thus apparent that the answer to the question as to whether it is worth while for a worker to receive health education is definitely "Yes."

It is, therefore, a matter of determining what is the best way to handle worker health education, and in this connection the employer's position is believed to be as follows:

Every executive will agree that it is well worth while to maintain equipment in the best possible running order, and it is only a short step from here for management to realize that the maintenance of the human machine is equally as important as, if not more important than, that of the machine in the plant. Probably the underlying reason why in the past so little thought has been given to the human machine is because the human body is such a well-designed unit that it will stand an unbelievable amount of abuse in comparison with ordinary plant equipment.

As I have often expressed in the matter of prevention of accidents, lessening the occupational disease hazards, and absenteeism, it will be much simpler for all concerned if management will consider worker health from a dollar-and-cents angle, and not from a paternalistic or altruistic motive. The great advance in the safety movement has not occurred because of humanitarian reasons, but because management finally realized that safety devices were cheaper in the long run than accidents. Just so with workers' health.

It is, of course, realized that health is definitely purchasable to a very great extent—just as accidents are preventable. I believe that the health of the people is our country's greatest natural asset, that industry's efficiency is dependent upon the health of the workers, and that the mental attitude of our workers, and, therefore, their productive output, is definitely affected by the health of their families, which in turn is dependent upon the general health of the community. I do not think that my attitude as to health varies greatly from that of most executives. However, it must be realized that it is very difficult for management to get this attitude across to the workers. For example, there would be considerable criticism if a company, no matter how excellent its motives, would suddenly specify how much spinach a worker was to eat, and that only two drinks of whiskey should be taken instead of say six. Therefore, I believe that, at least for the present, management should in general confine its efforts toward improvement in worker health to those activities over which it has control, for example, on company property, by lessening accidents and occupational hazards, leaving to the Federal and state agencies the problems of improving living conditions and personal habits.

This conclusion is also based on the realization that only the very large employers, who are probably not over 20% of the total in the United States, are really capable of undertaking constructive studies in improvement of workers' health, as the majority do not have medical or industrial hygiene staffs. There is, of course, no reason why managements, both large and small, should not cooperate with the state and Federal agencies by providing places for health lectures to be given by state or Federal representatives. In regard to lectures, I feel that they might well be held half on company time, and that if the employees are not willing to spend a portion of their own time, then the lectures are probably not worth while. Moving pictures can be shown with fine results, and health propaganda should be given a place in employee publications, provided it is written by an individual outside the company's personnel and of recognized standing. Space for posters on company bulletin boards should be made available, and pamphlets of governmental agencies or insurance companies should be distributed among employees—we have already obtained considerable help through the pamphlets issued by the Metropolitan Life Insurance Company. We wish, however, to reiterate that work of this kind can better be handled under present conditions by outside agencies rather than by management directly.

The next question to decide is whether Federal or state agencies should handle the health program.

Our company, the St. Joseph Lead, has never followed the practice of trying to handle all details from its New York office and has obtained satisfactory results through decentralized control—each division is responsible for its own operation. Policy matters and items which affect all divisions are handled in New York. Although under war conditions we have all become familiar with centralized Washington control, many of us have seen the enormous waste of time and effort that such a system necessitates, and we long for the return of the day when local matters will be handled locally. The drafters of our Constitution were certainly on firm ground in their policy of state's rights.

In my opinion the Federal government should aid in the education of engineers, doctors and research workers, and, upon completion of the training period in industrial hygiene, the individuals should be turned over to the state agencies. The Federal government could undertake medical, sanitation, and occupational disease studies, the preparation and setting up of standards for hazardous gases, dusts, etc., in which a large portion of our country is interested, but their work and responsibility should end here.

The position of the state agencies and their responsibility might be summarized as follows:

The state agencies would aid local doctors in matters of industrial hygiene, they would aid industry in solving health, safety, and various other problems by the issuance of proper codes and literature, and they should undertake the education of the worker and of the community on health matters. The attitude towards industry on the part of the state agencies should be cooperative and unbiased. If it should develop that certain codes or regulations are impractical because of subsequent developments, then proper steps should be taken to have them corrected.

If the state agencies are willing and able to accept this responsibility, then they must have more funds and more personnel, because it is a very big job. We must realize that there is no point in stating to men in hazardous occupations that they must be x-rayed every six months, or should take penicillin for venereal disease if the facilities are not readily available. Although examinations at college could be passed by cramming over the week end, an education cannot be obtained in this way, and the health education of the worker or of a community cannot be obtained by one lecture, one pamphlet, or a few posters. Years of effort and many thousands of dollars are required!

In 1923, the accident experience of the St. Joseph Lead Company was $3.51 per $100 of wage and salary roll, and our safety department expense was 10 cents per $100, a total of $3.61. In 1943, 20 years later, the accident experience had been reduced from $3.51 to only $0.77, and, in my opinion, this has been accomplished because the safety department expenses had increased from 10 cents to 59 cents per $100 of payroll. Results like this cannot be obtained overnight, nor should we expect any marked improvement in workers' health or in that of the general community without an expenditure of both time and money.

I, frankly, do not look for any great increase in the immediate appropriation for the state agencies, and, what is more important, I do not know where they can obtain competent personnel until after the war. However, I am not unduly discouraged, as no matter how small their contribution may be, it is of increasing importance to the economic security and general well-being of our country. We should not overlook the great victories that have already been obtained in the field of preventive medicine—the life span has been increased during the last 50 years by 20 years, and average life can now be assumed at 62 years.

In the field of nutrition, it seems to me that the future is almost unlimited. Apparently it is considered very poor form to compare expected human reactions with results obtained in plants or animals. (In the old silicosis suit days I was most enthusiastic to use the data obtained by Dr. Gardner at Saranac, which showed that there was no silica in the lung of a mule which has been underground working in dusty atmosphere for 25 years. However, our lawyers would not permit the data to be presented, as we would be comparing man to mules.) We have already seen the marvelous results that correct feeding has in the production of eggs, milk, wool and meat, and why, therefore, is it not sound to look forward to great improvement in human health by correct feeding? However, as I have already stated, for the time being at least let us have the state agencies and not management advise as to personal eating habits.

Being somewhat "practical minded," and desirous of always obtaining the most benefit per dollar expended, if the amount available to the state agencies is as small as I think it will be, then I would suggest that for the next few years a course should be given in the basic principles of health education, sanitation and nutrition in the high schools and colleges, especially in industrial centers. If we can get the "workers of tomorrow" thinking along the right lines, then very satisfactory results will be readily obtained when postwar funds and personnel are available.

The state agencies, however, can, even today, greatly aid industries through advising them in the unknown hazards that will arise in the production of new products. Industry welcomes advice and supervision of its operations, provided it is fair and competent. Our company has found that periodic checks by outside agencies are most helpful and the expense involved is an excellent investment. Physical properties, consisting of buildings, boilers, compressors, air receivers, etc., are routinely checked by outside parties, and the working conditions that affect the health of our employees are checked by annual arrangements with Saranac Laboratories, Harvard School of Public Health, and the Industrial Hygiene Foundation. We welcome visits of the state mine and factory inspectors. We have found by the trial and error method that money spent in improved working and living conditions pays dividends in human happiness and in dollars.

In conclusion, our company and, I am sure, industry in general will be willing to aid the state agencies in worker health education, because education over a period of years will wipe out the greatest cause of illness—which is ignorance.

The Labor Union's Responsibility

LEO PRICE, M.D.,
Director, Union Health Center

I FEEL that, before beginning a discussion of a union's responsibility in health education, it is important that the discussion be based on a generally acceptable definition of education. The dictionary defines it as: "The training of the mental and moral powers by a study of system of study and discipline, or by the experiences of life." In the United States workers and non-workers are constantly confronted with posters, pamphlets, newspaper articles of popularized medical content, advertisements and columns on nutrition. To call this material health education

presupposes that people study these posters and are trained by them, which I do not believe to be entirely the case.

Another source of education applies more specifically to industrial workers who must protect themselves. In most hazardous industries where workers are in danger of injury by accident or from exposure to dust, chemical fumes, and so on, three pressures are exerted on them to insure the fact that they will understand the need for health protection. The first and strongest is the worker's own concern with his health. The second is the demand of the government that he shall be made aware of existing dangers. The third is the economic stake of the employer who is concerned with compensation in the event of disability. Here education becomes more effective because it is specific and motivated.

Then there is education through discipline that is imposed either on the employer, the worker, or both. Every state has legislation covering working conditions. Factory fire, sanitation and compensation laws have accustomed them to working under standard conditions of safety and hygiene—from which we must conclude that compulsion is also a force for education.

The public health agencies impose compulsory protection of public health. Now every worker will submit his children to vaccination without fear because he has been educated to believe in its value by actual experience in the proof of smallpox control.

Let us evaluate the methods of education I have just outlined. The effectiveness of posters, pamphlets, and magazine articles presupposes the worker's willingness and ability to study and digest their messages. Governmental discipline certainly plays the greater role in health education, since it imposes safety standards and sanitary codes, in addition to vaccination control of disease. From this I believe we can conclude that such actual experience of life makes for more effective education.

A fine treatise on an ideal set of health instructions is absolutely valueless until some person reads it and acts upon it. Our definition says that education is training, and training cannot be measured until it functions. People measure every other kind of education; there is no reason why we shouldn't try to measure health education. Since our objective is improvement of the over-all health of the people, we have to decide by some yardstick what percentage of defect entitled a person to be called "healthy."

A great deal of the controversy in current discussions of medical care centers precisely on this point. We all know that the Selective Service examination has shown that a large proportion of our men have sufficiently serious defects to render them unfit for the armed services. Studies of the health of our school children also show a high incidence of defects, which makes us question the effectiveness of any of our present systems of so-called "health education."

I don't know if there have been any scientific studies made to determine how efficiently our health education has functioned. It is impossible to determine accurately how low a health standard we might have without any health education. But there is a question in my mind whether the present form of health education is adequate.

Up to this point I have discussed aspects of health education in which the worker assumes a relatively passive role. I have discussed health education as something which has been pushed toward or thrust upon the worker. Everybody knows that the most effective method of educating in any field, demands not a passive but an active participation on the part of the person to be taught. That is why I suggest that health education, to be effective, must start with an acual experience of life.

To prove the effectiveness of health measures and the value of early investigation of disease symptoms, we must take health improvement ideas off of posters and out of pamphlets and bring them to a working man *as an experience of life.*

I am not convinced that any worker has a sufficiently positive attitude toward posters and pamphlets. However, I am convinced that if you ask any worker about his health problems, you will have to listen to him for a long time. I think that almost every worker knows that his health is his most valuable asset. Nobody has to teach him that. Through experience he knows that he must be healthy in order to earn a living and maintain himself and his family. Holding his job is his chief reason for attaching so much importance to his health. He isn't concerned about his responsibility to society, nor does the possibility of public dependency concern him until he is actually threatened with it. Even then it may not bother him from a sociological standpoint but only in so far as his family and dependents will suffer.

Since the worker is actually more concerned with his own health than any other person, you may well ask why he hasn't reached a state of education where he will know how to take care of it. There are several answers to this: It might be poverty, fear or ignorance.

A large section of workers, particularly in low-paid industries do not have the money to carry out even the simplest and most understandable instructions they have read. If he can't afford to pay for heat, he won't sleep with his windows open, so fresh air at night is not considered. If he can't afford to buy enough food, he doesn't worry about a well-balanced diet, but rather, about filling his stomach. If he can't afford food and heat, he certainly isn't going to pay for a periodic medical examination, because he feels that while it may be a "good thing," it is a luxury beyond his income.

Then there is a second group of workers; men and women who have always been employed but who have lived in such financial insecurity that they are afraid to discover the true state of their health. When people need every cent they make for food and lodging and cannot afford to lose time from work, they feel they are forced to ignore symptoms of illness even when they are the source of great physical discomfort. Many workers whom most people regard as well-paid carry such a burden of family responsibility and budget on such a narrow margin of security, that they not only shun examination but absolutely deny ill health.

Third, there is a section of workers, and not only workers but people in all walks of life, who regard certain disabilities as trivial and cannot possibly evaluate symptoms as danger signals, because interpreting symptoms is the business of a doctor.

In my experience periodic medical examination is the strongest educational force. As I have pointed out, however, most workers have been unable to afford such examinations. Where free examination is offered to the individual, it frequently comes to him from some source he is unwilling to trust.

Even if every worker could be convinced, theoretically, of the importance of medical examination, he isn't educated to its value until the examination is available, financially and psychologically, which is what I mean by teaching through experience. Also, such experience must come from an agency he trusts. Many workers may trust charity clinics. Many workers

may trust their employers. I think there is no question that first and foremost the worker trusts people he feels will know and understand his problems—financially, socially, and psychologically. That is why workers feel that of all possible agencies, their own union is the most trustworthy, even in deciding matters of medical care. Union leaders are beginning to realize that and consequently recognize their responsibility to the worker in the field of health.

When you discuss unions all over the country you must understand that unions are not all similarly organized. Different unions have different structures. Some are old, and large, and powerful, and concentrated in one area. Others are small, geographically scattered, and struggling for their existence. Obviously those unions which are still newly organized, and concerned chiefly with bread and butter problems can't undertake the administration of medical care. I believe that the leadership in a great many unions is anxious to take some responsibility for the health education of its membership, but is often financially and mechanically unable to do so.

SOME unions, however, have already instituted health programs. Others are seriously considering such measures. Unfortunately, what I am best qualified to discuss, is not *representative* of union health programs. The International Ladies' Garment Workers' Union is carrying out a health program that has 31 years of experience behind it, and is therefore highly organized. Since all of you are aware of the sudden public interest in health, I presume you have called me here to find out what has been done in the union which I serve, and how much of what we have done I consider to be education.

First of all, we have a large clinic which I will describe later on. For conventional education by graphic presentation, we have a lot of posters on the walls of our clinic; we have a lot of posters on the walls of the shops and the union offices. This union used radio as an educational medium, and part of that radio time has been given over to talks on health. There are columns on health in numerous union publications. Printed material is available for distribution in the clinic. At one time we even gave a series of health talks in the shops in foreign languages as well as English.

You want to know whether we consider this health education. Well, of course we do, but in a limited sense, because whether these things in themselves constitute an effective method of education has yet to be proved. We hope that these methods help somewhat, but, since we cannot measure the results, we cannot evaluate them. We can only tell that talk-print education has worked when the occasional clinic patients tell us they read our message.

Printed material is of greatest value when its readers know where to go with problems they have been taught to recognize. Let us assume that people, through reading literature, realize that they need medical service. Then if medical care is not available either because of high cost or of no facilities—the knowledge is worthless. Even if they live in a town that has a free clinic, it is most unlikely that a worker will take a day off for a physical examination when clinic sessions come at a time that conflicts with working hours.

Since a worker must be either very sick or jobless before he goes to a public clinic in the middle of the day, I will leave it to you to figure out how much effect literature can have on preventive medicine.

We, however, have planned our service schedule at the health center specifically taking time from work into account. There are a number of very understandable reasons why we have so many patients availing themselves of our services. First: it is their own institution; they choose the doctors and they trust them. Second: the Center is located in the heart of the garment industry and is therefore accessible to most workers in the metropolitan area. Third: the services are given at hours that do not conflict with working hours. If a worker has to have special medical care and cannot take time from his job, every effort is made to have a physician attend him at the worker's convenience, either during his lunch hour or after work. In other words, the doctors serve these people just as private physicians would, and the people come to the Center at a time convenient to *them*. Fourth: although the services given may yield statistical data of medical interest, there is absolutely no research work done which will make the worker uneasy about being subjected to experimental therapy. Fifth: services are given at lower than cost rates, and a great number of examinations are made on a low cost prepaid basis. Many local unions have prepaid plans which provide some medical services. However, for union members who are not thus insured, services are provided at below-cost rates by an arrangement through which the parent union pays the Health Center the consequent deficit of operating such medical service.

From these five statements you can see that the value of printed health education material is vastly increased when a person sees such a clinic in actual operation. The value of health education is still further increased when local unions have health plans which include prepaid medical care.

A STRIKING example of the influence of a prepaid care is found in the health plan of the Children's Dressworkers' Union. This insurance plan entitles its members to medical services at the Center which may amount to $15 a year. This means a lot more medical service than the sum implies. The membership of this union is composed of an unusually young age group; 90% are girls under 25 years of age. Yet in spite of their youth and relative freedom from chronic illness, more than 10% of the members attended the Center in 1943, averaging 5.2 visits for each patient—as a direct result of the knowledge of availability of the services offered.

Even when medical service can be given at low rates, it is not used to the same extent as when it is offered without direct charge. In contrast to the record of 5.2 visits made by these young dressworkers, we have the record of the Cloakmakers' Union. In this union the membership is composed of men, most of whom are over 45. Among them there is a much higher incidence of chronic disease and illness. These cloakmakers were one of the groups that helped to found and build the Center in 1913. They have been using the Center as individuals for a much longer period of time than the young girls. In 1943, 30% of the membership utilized the center. In talking to them you find they certainly have as great, if not a greater, appreciation of the Center's value. Still, these older men made only 4.3 visits as compared with the 5.2 made by the young girls who need less medical care.

The reason for this is that while the cloakmakers receive two prepaid examinations yearly, extended medical care in the cloakmakers' union is not underwritten by an insurance program as it is in the Children's Dressworkers' Union. The girls had to pay only 35% of their medical cost, while the older men paid 77% of the cost of their medical care at the Center.

The striking point to make here is that the girls availed themselves of care for which they did not have to pay, since 65% of the cost was borne by the insurance plan. The 35% which they paid also covered the cost of therapy which they found they needed after they had exhausted their $15 yearly credit.

On the other hand, the older men were prepaid for only diagnostic examination and, where minor defects were pointed out, they were not cared for as were the girls. Where serious defects were shown which the men could not afford to neglect, of course they had to buy therapeutic services, so that the 77% which they paid toward the cost of their medical care represents a payment for needed treatment. Here we see that while a great deal is accomplished by the prepaid diagnostic examination in that it hastens remedial work, it is obvious that lesser defects which do not cause acute discomfort will be taken care of by low income workers only when they can budget for the cost involved by some method of pre-payment.

After one compares these two groups of people and their two insurance plans, I question anybody to draw the line that will separate health care from health education. Here are cloakmakers who have had health education for 30 years. Compared to other crafts of the garment trade, they are a well-paid, intelligent, group of people. But they aren't healthy people. When a person finds out he needs medical aid and he has a clinic that is available, if he cannot afford to go to that clinic he just does not go, no matter how well he knows he should. Is he educated or isn't he educated? A person may or may not have learned something from reading about periodic health examinations, but when he acts on that information and does have himself examined, he has learned something. In our experience, the people who are actually examined are the ones who return to the clinic time and again and learn to take care of themselves to a certain extent. Habituation through doing, and nothing else, is education—but the source of education through experience must come through some such clinic as ours, which can offer good medical services on a prepaid basis.

The girls of the Children's Dressworkers' Union know more about the importance of taking care of their health through doing so than do the older men in the cloak union. The young girls do so not through wisdom but because their union has undertaken the responsibility for seeing that they learn about health care through actual experience.

When medical benefits were first offered in 1937, only 4% of the membership took advantage of the service offered. And of the 4%, one quarter of the applicants for this service were older men, who comprised only one-tenth of the total membership of the union.

In 1937, only a quarter of these worker patients used all the funds placed at their disposal. Of the remaining 75% that made only partial use of the funds, one-fourth made just a single visit. Today, seven years later, let us repeat, 10%, mostly young girls, take advantage of this pre-payment service and use practically all of the funds allowed.

There is still another important point, and that is the mutual feeling of trust between those who are giving the medical service and the willingness of the worker to avail himself of examination. When workers are in urgent need of treatment which they cannot afford, they will struggle along under disability rather than take help from an agency which carries the stigma of charity. But they will avail themselves of services from a source where there is no fear of revelation. Some unions pay for the treatment of syphilis, and the patient's name is not divulged. Others have invited the center to conduct mass chest x-ray, serological and eye surveys. Early discovery of disease and doing something about it, has been emphasized for years.

THE history of the Union Health Center has been one of constant expansion—both of facilities and scope of service—dictated by the needs of the people who use it!

At this time it occupies 20,000 square feet of space—covering two floors of a loft building in the middle of the garment district in Manhattan. Twenty-four examining rooms—constructed with an eye to privacy, comfort, and efficiency of examination; special x-ray rooms; diagnostic equipment which includes electrocardiograph, basal metabolism and physiotherapy machinery, facilities for audiometric tests, and optical examinations—in short, all the necessary elaborate and costly diagnostic equipment is concentrated in the Center, so that we are in an excellent position to distribute medical care of good quality. Our physicians, and there are four full-time and 80 part-time qualified doctors on our staff—are integrated into a working unit that functions smoothly and cooperatively on a salary or per hour basis, again reducing the cost of distributing medical care.

Twelve registered nurses are in attendance, serving not only as auxiliary medical personnel, but also as registrars and administrators. As a worker walks into the reception room, he is greeted by a nurse who is trained not only to understand his medical symptoms sufficiently to assign him to a physician, but his fears and his speech limitations, etc., and make him comfortable through that understanding.

From a growth of 1800 visits in 1913 to 116,000 in 1943, shows that the Health Center furnished a practical answer to the subject of labor's responsibility in worker's health education. Health security is derived from the knowledge of the fact that some medical service is available.

It has been demonstrated that workers without much education have learned in part how to take care of their health.

I hope you will agree with me that health education is fostered by providing facilities for medical care to workers. And such facilities must be made physically and financially available and also attractive.

Discussion

MR. MANFRED BOWDITCH (Boston): Miss Perkins mentioned that two states on the West Coast are now employing industrial health education specialists. As a point of practical information, I would like to inquire whether their salaries are paid by those states or from Federal funds?

MISS PERKINS: I don't know.

MR. BLOOMFIELD: When Title 6 funds of the Health Service reach the hands of the state treasury, they immediately become state funds. In other words, these two people are probably paid from state funds, although state funds might originally have been Title 6 funds. The State of Washington is one that has a state health educator.

MR. BOWDITCH: The reason I term that a practical question is that we wouldn't have a ghost of a chance to persuade our legislature to produce the funds for such a position. We did make an attempt at one time to provide such a position from Federal funds.

DR. ALBERT S. GRAY (Hartford, Connecticut): It is true there are a considerable number of health departments that do have directors of health education. We have one.

MR. ROBERT M. BROWN (St. Louis): Since the ordinary hygiene bureau is very much limited from the standpoint

of funds for personnel, is there any practical way that we can hope to institute an industrial worker education program when we have just about all we can do to keep abreast of the control of occupational diseases.

DR. C. SCOTT MCKINLEY (Charleston, West Virginia): I have a partial answer to that. We do have an opportunity in the larger plants. The better the medical department and nursing service, the better education there will be of the workers. If there is a well running medical department, one in which the employees have confidence, there will be a piece-meal type of education but it does permeate through the plant. That can be done in the larger plants, but you will still have the problem of the smaller ones.

CHAIRMAN BREHM: In other words, we will have to improvise and do what we can for the time being.

DR. GRAY: The worker is still a member of the community, and we are doing a lot of educational work, whether you call it industrial or not. Educative material is being supplied by the Bureau of Venereal Diseases and by various other bureaus, tuberculosis and nutrition, so a good deal of work is being accomplished. I would suggest that we use the facilities we already have in the departments of health to apply that education more specifically.

Now in connection with what DR. PRICE said, we are, of course, all familiar with the wonderful job he is doing among the garment workers. In Connecticut we have a very definite program of x-raying groups of workers. At the same time that you x-ray, you can show the workers a practical application of your educational material. The same is true in the making of a considerable number of serological examinations.

This has been done in nutrition, by demonstrating in various industries. They have a plan in Bridgeport, for example, which has attained sufficient eminence to be called the Bridgeport Plan, whereby they demonstrate lunch boxes, even in the various department stores, utilities and factories, to give workers an idea of what a really well-balanced lunch box should contain.

That is a practical application of the theoretical material in your pamphlets, films and posters.

DR. LEONARD GREENBURG (New York): We have much to learn in this field of public health education and in the field of industrial health education; and we may just as well stop kidding ourselves right now when we begin to look the subject over. We just think we are doing a job and that we know how to do a job, while we don't know the first fundamentals about it. Let me give you an example. The school health people for years have been working on school health education and on school health examination. We have had plenty of opportunity to see the fruition of that program. When the draft statistics came through recently, we found that the percentage of rejects among men 18 and 19 years of age was 23.8. Now, I submit that that isn't evidence of any real job being done. Fundamentally we don't know anything about education. The problem starts on the psychological level, and it doesn't start by somebody deciding to make a moving picture or a poster, because you can make 84 different kinds of posters and you don't know which ones will do the work. You have to start in on a very fundamental basic psychological level with any attempt in this field.

I was very much impressed with what DR. PRICE said. When you get the person in for a physical examination, then you can begin to do a health education job on him or her. But I think what we must do in this field—and we are doing something in New York State, though we haven't released any publicity yet—is to make really fundamental studies on how to approach the problem.

Finally, we have to be prepared, as MR. FLETCHER said, to decentralize the program. We cannot hope to do it on a central basis because the problem is too large and the staff is too small. It is like trying to do industrial hygiene in a fairly large state with a fairly small staff. I submit that every staff in the United States is too small for the job, including the biggest staff in any state in the union.

So we have got to readjust a lot of our old ideas and concepts about how to approach this problem and be willing to admit that there are some things we don't know and that some of the things we have done are wrong, and we have got to find out what the basic fundamental right approaches are before we go ahead and waste a lot of time and more energy and funds.

MR. BOWDITCH: We have a little problem in Massachusetts which is fundamentally one of industrial health education and one on which I would like to ask DR. PRICE'S advice, not only because I think he will come nearer to having the answer than anyone else, but also because I think it may in some degree be typical of problems that occur throughout the country.

The requests for the services of our agency which come from labor sources are very few proportionately. We recently received a request for such aid from a labor union which made a somewhat greater impression on us than it might have from other sources. We were asked to go to two plants owned by the same company, in both of which they had a dermatitis problem due to a cementing operation. We found that cement was being applied by a finger method, so that the workers had cement on their fingers constantly; and that, because of the action of the cement and the rather rough treatment their fingers received in trying to remove it, it was no wonder they had dermatitis.

It seemed to us an operation which could perfectly well be done by some mechanical or brush method rather than by the finger method. When we told the management about that, we were told that such was their opinion also; that, in fact, they had worked out such methods but that the union would have none of it because they felt that doing it by the finger method involved a skill which would not be involved if it were done with brushes or otherwise. Therefore, the union would not listen to any proposal that it be done any way except by the fingers. I would like to ask DR. PRICE where we go from there?

DR. PRICE: The subject isn't unfamiliar to me because we have had workers come into the clinic, and the dermatologist has called my attention to various forms of dermatitis which should be treated and controlled. I have talked the matter over with some of the union leaders.

In the old days, when conditions were pretty bad, most of these fellows would rather work with a dermatitis than not work at all. So the answer was, "Let it go. Forget about it. The worker is perfectly satisfied. The employer is glad not to have a compensation case in his shop, and the season is short, so let's forget it."

We can accept that in an individual case, but I don't think we ought to accept it as an answer to policy. I think there is an educational job. You have to convince the leader that he must convince the workers that that isn't the proper way to do it. While the local groups might decide they want to go ahead this way, there are plenty of officials in the higher brackets who understand enough about such a problem to say, "If this is going to be permitted and you are going to be influenced by the individual workers in that shop, then something is going to come along and management is going to tell you to close your eyes to it."

I am sure you will get cooperation from the ultimate leadership to see that a thing like that is stopped and, in the end, you will get the cooperation of the union.

DR. MORRIS RASKIN (Detroit): On the platform are represented all elements concerning the problem, and the answer lies with the proper coordination of efforts of the elements represented. If in each plant there existed a health committee composed of representatives of labor and management, in association with the Public Health agencies, one could formulate a basis for the development of health education plans. The greatest barrier at the present time to the development of these plans is a lack of mutual trust and confidence between the workers who suffer the diseases of industry and the medical departments who can help the workers. This lack of confidence and trust can be overcome by proper relationships developed through conversations, at first, and from these will evolve plans jointly sponsored by both groups.

One hears much about educating the worker, and all kinds of educational material is thrown at him. One ex-

pects that after receiving this information he should be able to protect himself, yet there is so much concealed from him. In the Detroit area, for example, we find that the Public Health agencies are asking the local unions to be present when they inspect plants. This has helped a lot. It has developed confidence in the local health agency. The workers now trust this agency.

In other areas the workers are excluded from the inspections. I think a lot could be done if the workers were kept informed of the results of inspection, informed of the dangerous nature of the materials handled.

Within the company medical department itself there is a tremendous opportunity for personal contact and education. The hundreds of thousands of workers who travel through these departments could be approached individually as well as collectively through the programs developed by joint sponsorship.

Health columns in local union papers, written by both labor and management, will go a long way. Health columns written by labor and management within management publications will help a lot, too, as well as realistic movies which present the pictures as they are, not attempting to show the company as a beneficent institution but rather approaching the question of health as it is.

MR. LLOYD M. FARNER (Seattle, Washington): I agree heartily that cooperative effort of management and labor in educational programs is essential, and I would like to say a word about the responsibility of the official health agency in that connection. We of industrial hygiene are merely a part of the health department's official health agency. Mr. Walworth is, I believe, the only one who mentioned this morning the importance of a local health department. I think we must use the facilities of not only the other divisions in the state health department but also the local, and our job is to open the door with both management and labor. We have contact with those groups, and thus we can make it possible for the other individuals to come in and present the material that is needed.

Some of you may have seen the welder's bulletin we put out recently. We prepared a rough draft of this bulletin and then went with that to the business agents and other officials of the unions concerned, and got their suggestions and recommendations. Then we went to the safety engineers and managements of all of the leading shipyards in the state. With the combination of the suggestions and recommendations made by these groups, we then revised the pamphlet, published it, and have had the wholehearted cooperation in distribution of further education along that line by both management and labor because they were part of it.

PLANT CONDITIONS

To What Extent Should Official Findings Regarding Them Be Made Available to Workers?

Round Table Discussion, Led by

KENNETH E. MARKUSON, M.D.,
Director, Bureau of Industrial Hygiene,
Michigan Department of Health

CERTAIN requests and at times almost demands are being made upon the official agencies for detailed copies of plant studies, containing all of the findings on engineering, on chemistry, and on medical information involving the worker and the plant.

The title of this discussion should be changed a little bit. I think rather than just the worker, we should also include the unions, attorneys, and any other third party that may wish a copy of the report.

As a corollary of this subject, I think something should also be said on the amount of information that should be given the plant on medical information regarding the worker. I know that in some places—and some of you have told me the same thing—positive serology reports are given to management.

I don't believe that is right. Neither do I believe that our findings as an official agency relative to the results of any plant studied should be turned over to the individual worker, to the union, or to the attorney. I think that there will be no faster way of defeating our own purpose than by divulging this information to anyone but plant management. It is plant management and only plant management that must rectify the conditions that we find.

Now, with that beginning, I would like to have this opened up for discussion, and I may have a few words to say later.

Discussion

CHAIRMAN PAUL A. BREHM: I am sure that this one subject has offered headaches for all the industrial hygiene agencies in the various states and cities, and I am also sure that all of you have some ideas as to what information should be divulged, or if any should be divulged, and how you handle these situations in your own areas.

DR. LOWE: I would like to ask DR. MARKUSON, isn't all this information subject to subpoena in case of litigation?

DR. MARKUSON: In some states the records that are obtained by the official agencies are absolutely confidential and cannot be presented in court. In others they can only be subpoenaed by another official agency, such as the compensation commission, but they cannot be subpoenaed by an attorney on one side or the other.

MR. BOWDITCH: In Massachusetts we attempted to get a bill through the legislature some 10 years ago making these reports of ours privileged so that they could not be subpoenaed, but that was unsuccessful. In the 10 years that our work has been going on, we have never yet been subpoenaed. Every one of our reports has a rubber stamp on it to the effect that it is submitted on the basis that it will be regarded as confidential, and not to be used in any suit at law or before the compensation board.

In those 10 years there have been only two attempts to break down that gentlemen's agreement, and in both cases we were able to avoid being subpoenaed. So that, as far as we are concerned, the question of whether reports can or cannot be subpoenaed is more or less academic.

DR. GRAY: How we regard this matter in Connecticut is very definitely shown by the fact that we have in our law the statement that the results of the investigation of the Bureau of Industrial Hygiene cannot be used in compensation hearings or in a court of law. Some enterprising attorney thought, however, that there was no reason why he shouldn't be able to see them. He knew that he couldn't use them in a court of law, but he thought he would like to find out what it was all about. So he demanded the results of one of our investigations and the attorney-general ruled that our investigations and reports were to be used for the work of controlling occupational diseases and, therefore, were not public property.

I think that stand is very definitely justified because compensation and the control of the condition present two entirely separate entities, and both are important. To the extent that preventive agencies, such as your Bureau of Industrial Hygiene, enter into the controversial question of adjudication of cases, just to that extent do they lose a large part of their usefulness.

I am sure that, when I relate my experience, it is the experience of many others who are holding these records confidential; i.e., that a great deal of the information we do obtain by which we are able to control conditions in industry is obtained through the cooperation of industry. I have said heretofore that on innumerable occasions when managements know the results of our investigation can be used only to control conditions shown to be hazardous, they open up the situation existing in their plants. It is not at all uncommon for them to suggest—when we go into a plant to look at a degreaser, for example—that there is only a very light load on that particular day and if we will let them know when we are coming they will save up material for us and run a lot of it through for

several hours so we can see how bad the conditions may be.

You can readily realize what would happen if they knew any results that we got could be used in court or in compensation hearings against them.

The only other conceivable reason that a lawyer from the union could have for wanting to know about conditions in a plant would be to see that they are properly taken care of. We have been appointed by the state legislature to do that particular job, and if we needed union help we could very readily secure it.

I remember one occasion on which we were making some physical examinations of workers, and at the same time we made determinations of the amount of material to which they were exposed. The union cooperated with us 100%, persuading those men to have physical examinations. Then they told us they wanted to know what the results of our examination were. I said, "Well, if I told you the results of the determinations in the northeast corner of the room, what if the plant wants to know what the physical condition of that man is, not only in relation to the material to which he is exposed but also his general physical condition? You wouldn't want me to do that, would you?" They agreed they would not. They also agreed it was as fair for one as for the other; that if they could rely upon us to take care of those conditions which did show a hazard, then that was all that was necessary. If they couldn't rely on us to do that, then they should get somebody else to do the job.

So I think, when you consider the whole problem, it is very much better to have these records and reports held confidential; simply to be used to do the work we are supposed to do, to control the conditions in industry.

DR. MARKUSON: I would like to ask MR. BOWDITCH what his attitude would be if a union or worker asked for a copy of the report?

MR. BOWDITCH: We would not give it to them. Where a request for an investigation comes to us from a union source or from an individual worker, we always see to it that they have assurance that any condition we have found which required clearing up has been cleared up. In no case do we let them see the report of actual conditions with determinations, etc., because we do not believe that they are entitled to that.

I quite agree with DR. GRAY, and I think with you in so far as you have stated your position, that we must look to managements for the clearing up of these conditions, and, therefore, it is their concern to see these reports and no one else's. Furthermore, as DR. GRAY has said, you have to look to management for all kinds of information which they would not give you if they felt it was going to be used to their disadvantage.

DR. MARKUSON: And to date you have had no difficulty with that procedure?

MR. BOWDITCH: Absolutely no difficulty. An example will, perhaps, be of interest.

On one occasion a union man came to my office and told me that conditions were very bad in a certain rayon mill, and would we please investigate it? I said, "Yes, but we will have to know in what part of this plant these conditions are. Can you get us that information?" He said he would see that we had it immediately. I then said, "Of course, you understand that we will investigate and correct these conditions if necessary, but you will not see an actual copy of our report." Whereupon he turned on his heel and walked out the door, and I never saw him or heard from him again. In other words, he was engaged in organizing that plant and he was simply hoping to get something on them for the purpose of organizing the workers—which is perfectly legitimate from his viewpoint, but no part of our concern.

DR. WEST: I really can't understand what harm would come from exposing the results of an inspection to a responsible organization. I can see a great good accomplished in the development of trust. It is not always necessary to report the complete findings to a local union requesting such information, but just such information as informs them that they are in a hazard or that they are not, might be sufficient that they can be protected by doing so and so. However, if the reports are made available to both sides, labor and management, I think it can develop a great trust in both. I do know that, in those instances where the health agencies have informed the workers of the hazard, it has developed good relationships and the basis for better relationships to come.

DR. GRAY: I would like to say that if, as part of the control measures, it is necessary to change operative procedure, we do that; for instance, if a man is working over a degreaser and is pulling material out too fast or is pulling it out before it is drained, then he is told what he should do in order to safeguard his health.

DR. GREENBURG: I think the unions want to consider the official agency more trustworthy, and take it into their confidence and be guided by its evidence. There has been too much suspicion on all sides, and I agree with DR. MARKUSON that this is a case of developing mutual confidence in order to be able successfully to climb over these obstacles with which we are all confronted.

MR. P. J. HOUSER (Des Moines, Iowa): I would like to ask DR. GRAY, what is his policy in a case where the insurance company which carries the compensation for that firm asks for a copy of the report to be used in a compensation claim.

DR. GRAY: If the insurance company doing this work wants a copy of it, we write to the company to whom we sent the report and tell them the insurance company has requested it, and we enclose a certified copy that they can do with as they like.

DR. M. H. KRONENBERG (Chicago): In our state the attorney general has ruled that our reports are not public records. The only way anyone can get a copy of them is to subpoena our records before a regular court of law. However, in cases where we have received complaints from labor organizations and workers, we do acknowledge the written request by telling them that we made a survey of this particular plant and have made certain recommendations, and that we will follow up the recommendations with the understanding that as soon as they are completed the union will be notified.

It has not been a problem in our state. We have had fairly good success with our trade unions and workers. However, once in a while we do run into somebody who makes that demand, and when that occasion does arise we give them everything we have.

DR. SPOLYER: We have no law prohibiting us from giving any information, but we do hold all information in strictest confidence. We have the Commissioner of Health's viewpoint on that. We do not give any reports to unions, insurance groups, or individuals. If someone wants to use the record in litigation, he can subpoena, but no one previews the record. In other words, the lawyer has no idea of what he is actually subpoenaing. We have had only two instances, and in both we were very good witnesses for the other side because the lawyer was actually getting some data under subpoena that were detrimental to him.

All medical findings are submitted to the medical departments only. If there isn't a medical department we summarize the major findings in general terms to management, but we do not submit to management any specific medical findings.

MR. WARREN COOK: Would it be in order to suggest that there are certain constructive advantages in giving certain types of findings to the workers? I have reference to such an incident as where a group of workers may be engaged in spray painting. Exhaust ventilation may be provided, but certain of the workers may be exposed to lead pigment, say, where they may not wear respirators which are provided, or where they may stand between the spray and the exhaust fan.

Where the lead determinations are high, those men can be told what that result is. They may have been doing one of these things that cause them to have the high exposure, and if these acts which are causing high exposures are discontinued, similar determinations one or two months afterward will show they are taking proper care of themselves.

This method has been used in a number of cases by us, and we have found that, by means of it, the man knows he

is being checked upon, even though we may not be there every minute of the day throughout the month.

MR. W. G. HAZARD (Trenton, New Jersey): I speak as sort of a newcomer in this work. It seems to me while many of these cases must be decided individually at the time, we do have to have a policy. The work of the bureau is being paid for by the taxpayers. It is there to serve both management and labor, as well as the general public. I can't see why a labor union should be denied a copy of the report, if the report is a brief affair as we have been trying to make ours, which contains principally recommendations.

I can see, however, that if the report has an elaborate analysis of the scientific findings, those findings could be misinterpreted. But if we leave out the laboratory detail and confine the report only to the recommendations, and if the labor union asks for that, I don't see why we can't do it. As a matter of fact, in order to establish the confidence in the state agency that has already been mentioned, I think we have to treat both management and labor in the same way. We are working for both of them.

MR. BOWDITCH: I would like to ask MR. HAZARD whether he would submit such a report to the labor union without letting management know that he intended to do so?

MR. HAZARD: We would never do that. Our report always goes to the plant management. The copy to the labor union is in addition. We don't send a report to the medical department or to the union. We send it always to the plant managers because they are the owners and operators of the business.

MR. BOWDITCH: I asked that question because on the answer I wanted to base this second question. Do you feel, MR. HAZARD, that the management, knowing that you are going to send your report to the labor union, will be as free in giving you information as it would be if, as in our case, it was known that you were not going to send it?

MR. HAZARD: We always try to explain to the management exactly to whom copies of this report go before we leave the plant. They know before the report is issued that the labor union gets a copy of it. Let me make one other statement. We don't always send a copy of every report to the labor union. It is only in those cases where the labor union representative comes through the plant with us when we are making the tests.

DR. GRAY: MR. HAZARD says his reports are considered recommendations. Possibly his method is better than the one that is generally used, in which we endeavor to tell industry why we are making the recommendations—which means we tell industry what we found. Now, if you just give to the labor union the recommendations, and then the labor union asks you what the results of your actual determinations were, what do you do then?

MR. HAZARD: That has already been covered before our man leaves the plant. If we are going to send a copy of the report to the labor union, we attempt to hold a meeting at the plant after the inspection is completed to summarize our findings with both management and labor in so far as that is possible. Certain tests often times have to be completed in the laboratory, and we tell them that at the time. Maybe the whole result will depend on those tests, so obviously we cannot discuss them, but we do discuss, with both groups and all groups that are interested, our findings while we are still at the plant. The report then confirms the discussion.

DR. GRAY: Yes, but that is a result, if I may say so, of mere inspection. What your opinion is results from your experience. The facts are finally determined upon the chemical determinations that you make or your physical determinations, which in most cases you don't send. If labor asks for them definitely, do you give them?

MR. HAZARD: They have never asked for the dust count.

DR. GRAY: Well, they haven't thought of it. They will.

MR. BOWDITCH: May I add one more word? It is a poor rule that doesn't work both ways, and there is often information that we do not give to management, just as we would not give it in a controversial situation to labor. I have in mind an illustrative situation. Several years ago the father of a girl who worked in a factory near Boston called me up, very much exercised about the conditions of her job which, he felt, were doing her harm. I told him that we would investigate that situation, and give him some sort of report. It happened that the physician of that plant is a very good friend of mine. He is sitting right here in this room today, and he doesn't know yet that the investigation we made and the correction we secured were the result of the complaint of a worker's parent. In other words, let's play fair with both sides.

MR. BLOOMFIELD: We don't have that particular problem because, as you know, the Public Health Service has no legal responsibility for the protection of the health of the workers beyond that which comes under our jurisdiction as Federal workers. We cannot, of course, escape comment on this particular topic because we are consultants to the states on various problems, not only technical but also administrative.

Some of you may wonder why we are discussing this topic, that is, those of you who are perhaps not familiar with the growth and development of the industrial hygiene movement in this country and possibly don't realize that official work in this field is relatively new, with the exception of a few states—New York, Connecticut, and several others. Most of the official agencies are practically babes in the woods. They have been in existence anywhere from six years to as recently as the last two years.

Analysis of reports we have been getting from the various divisions show that, up to the last year or so, the requests come mainly from management. Very few requests come from labor unions. However, labor, either individually or collectively through unions, is calling upon industrial hygiene units more and more for services. Therefore, because this constitutes a new experience, there has really been no standardization on how to deal with these requests from workers or unions except in some states where the law is pretty specific on the subject.

In trying to answer this question, we have analyzed a public agency's responsibility in this field. It seems to us that the logical procedure to follow is something like this.

To begin with, we feel that if a worker, or group of workers, is dissatisfied with working conditions in the plant, the attention of managements should be called to this fact at once. They are the first people to go to with complaints—not to some other agency but to the management. As owners of the plant, the management should be the one to call on the industrial hygiene agency, if one exists, for services and advice regarding the problem, for it is management that will have to make the necessary financial outlays in the final analysis in improving the working conditions, if improvements are indicated.

However, if management should fail in that step, shrug it off as "just another gripe from the union"—then I think the union is perfectly justified in going to the official agency and saying, "We want this corrected. We think something is rotten. We have asked the management and they haven't done anything about it, and now we want you to do something." They are within their rights in making such a request.

Then the official agency should go to the plant, get hold of top management, and tell them, "We have had a complaint from the union, or a citizen, or someone who works here, and we would like your cooperation in making an investigation. This is a fact-finding investigation. We merely want to perform our function and duty."

As soon as the investigation is started, the worker or the union, whoever made the complaint, should be notified by the industrial hygiene agency that they are at work and evaluating the condition; and, when the study has been completed and a detailed report written to the management, the official agency should sit down with management and discuss this entire condition. Also I think it advisable that the responsible officials of the union be called to sit in on the situation.

Last year when I was out in the State of Washington, the first day I was there, DR. FARNER, director of industrial hygiene, and his health commissioner, and I, went out to a shipyard where they had an epidemic of gastroenteritis. Eight thousand men threatened to strike because they felt their health had been injured; some 750

of them had been ill because of pollution of the water supply. In that particular case we sat down with the Navy, for which the ships were being built, and three of the shop stewards and management. We threshed the whole thing out and arrived at a solution. It wasn't necessary to give them detailed findings or anything else. In other words, I don't think these detailed findings necessarily should be sent to the union or to anybody else except that management will want them because they will need them in making corrections. Also the union should be notified, I think, that a report has been submitted, discussed with management, and recommendations made, and that there will be a follow-up within a reasonable time, say 60 days, three months, or whatever period it takes to get the necessary equipment in these days of high priorities, if that is indicated.

On the other hand, if the union insists—I don't know that they do insist, but suppose they do—that they want a complete detailed report of the chemical findings and everything else, I think this should be refused, and I will tell you why I think so.

After all, the union should have only three reasons for wanting a copy of the detailed report: First, is its interest in controlling the hazardous condition. In fact, I think that is the only interest the union should have—controlling the condition.

The union should have sufficient confidence in the official agency; and the industrial hygiene unit, by its activity, should merit that confidence. Perhaps some of you don't now, but you should, and you will some day, so the union will be perfectly willing to leave it up to you and in your hands to handle this situation with the people that are involved.

Secondly, if the official agency should provide the union with a copy of the report, it might be used in a manner not conducive to further cordial relations between the official agency and management. If the report were used, for example, to bring undue pressure on management to obtain conditions on hours, seniority rights, etc., obviously the management would hesitate to deal with the official agency in the future. In this way the official agency would really be defeating its own ends.

The industrial hygiene unit is charged solely with the duty of evaluating and controlling health hazards in industry.

The unit can do this only by remaining a neutral, impartial, fact-finding agency, meriting the confidence of both management and labor. It can't take sides in the issues.

It is justified in furnishing reports to management, since in this country it is management that is held responsible for the maintenance of standards as regards working conditions, not anybody else. It is management, through its own efforts, its own funds, that is in position to correct these conditions.

The industrial hygiene unit, as an agency, will always exist; it will always go on as part of public service. Its program, therefore, is of long range, not just for the duration of the war. It can't afford to bring down standards for one instant.

Having gained confidence of management by service, impartial treatment, these agencies are in a position to accomplish a general improvement far beyond the problem they are first called in on. If they lose that confidence, the union will only be able to obtain improvement by coercion in the future.

I am not talking about copies of general reports such as MR. HAZARD mentioned. The only other reason they might want a detailed report is for the purpose of using that report in evidence in compensation claims or common law claims.

In this respect, again, it is unfair to ask the official agency to present such a report to the union, since management will feel that its confidence has been violated and will not request the services of the official agency again. It feels that the results of the official agency's work may some day be used against it.

It is equally true that management may want to use the report if it happens to be in its favor. I don't think it should be allowed to do so. What is fair for one is fair for the other. Reports of the industrial hygiene agency should never be used in litigation by either management or labor.

This, however, poses a problem. The only exception is if the court needs data to determine whether certain alleged conditions really exist. Some of you may differ with my views on the subject, but I have expressed them before in print. Then, and then only, should the commission and court call upon the official agency to determine the facts in the case. In this way both management and labor will realize the industrial hygiene unit is functioning in a purely impartial manner.

Public health agencies should be more aware of their responsibilities in this particular field, and they should not hesitate either to make the necessary studies involved in cases of this sort or to render the testimony needed; at most, the volume of such work will be negligible. By shirking this responsibility—and I want to emphasize this point—the state health departments only strengthen the case of other agencies in the state that feel they should take over industrial hygiene work to give that kind of service, since they now argue they must have that service within their departments if only for the purpose of ascertaining such facts in the event of litigation.

This afternoon you will hear from a gentleman who is engaged in improving production through labor-management cooperation, MR. FEWKES. Last summer, in speaking before the United Automobile Workers, I indicated that the best way to get around this whole problem, as DR. RASKIN mentioned this morning, is to have, in your labor-management committee, a subcommittee on safety and health, and let that committee call in the official industrial hygiene agency.

Then you are being called in by both sides. You can render a report to that committee, and you will not be doing an injustice to anyone at all.

It is my firm belief that if the industrial hygiene units will follow this procedure, in time you will obtain the confidence of labor, management, and everybody else involved.

DR. MARKUSON: The only thing I have to say in conclusion is regarding a general policy that might be of help to all of the different bureaus. I know that, in the various sections of the country, there are bound to be differences of one sort or another, but I do feel that all of us should put our cards on the table when we first go into a plant. We should tell them what we are there for and the manner in which our reports are going to be handled. Then, and only then, will we deserve the confidence of both labor and management.

The Coordination of Federal and State Industrial Nutrition Programs

ROBERT S. GOODHART, P.A. Surgeon (R) USPHS,
Chief, Industrial Feeding Programs Division,
Civilian Food Requirements Branch,
Office of Distribution,
War Food Administration

AN UNPRECEDENTED amount of attention has been paid to the nutrition of industrial workers in the United States during the past two years. This interest has been translated into positive measures to protect the nutritional welfare of the worker in a creditably large number of instances.

A survey of manufacturing plants conducted by the War Food Administration in the Northeastern States in October, 1943, and in the rest of the country in March, 1944, reveals that 48.8% of all manufacturing plants provide feeding facilities for their employees. Ninety per cent of the plants with 2500 or more employees have facilities. The percentage with facilities drops to 79.8 in plants with 1000 to 2,499 employees; to 62.5 in those employing 500-999; to 45.5 where the

The chipped teacup of the PATRIOTIC Mrs. Jones

No matter who the guest—Mrs. Jones brings out her chipped teacup with no embarrassment. On the contrary, with a thrill of pride.

Not very pretty, that chip. But it bears witness to the fact that Mrs. Jones has her nation's welfare at heart.

Mrs. Jones has given up all unnecessary spending for the duration. By doing *without* —she is helping to fight inflation.

Maybe she doesn't know all the complicated theories about inflation. But she does know that her government has asked her *not to spend.*

So Mrs. Jones is making all the old things do . . . not only that teacup. She's wearing her clothes for another year—and another. She's not competing with her neighbors for merchandise of any sort.

And the dollars she's not spending now are safely put away (and earning interest) for the peacetime years ahead. *Then* those dollars will buy things that can't be had for any price today.

If we all are like Mrs. Jones, there will be no inflation with skyrocket prices. If we all are like her, dangerous Black Markets cannot exist.

A chipped teacup stands for all that . . . for a *sound, secure* U. S. A.

7 RULES FOR PATRIOTIC AMERICANS TO REMEMBER EVERY DAY

1. Buy only what you *absolutely need.* Make the article you have last longer by proper care. Avoid waste.
2. Pay no more than ceiling prices. Buy rationed goods only by exchanging stamps. (Rationing and ceiling prices are for *your protection.*)
3. Pay willingly any taxes that your country needs. (They are the cheapest way of paying for the war.)
4. Pay off your old debts—avoid making new ones.
5. Don't ask more money for the goods you sell or for the work you do. Higher prices come out of everybody's pocket—including *yours.*
6. Establish and maintain a savings account; maintain adequate life insurance.
7. Buy all the War Bonds you can—and hold 'em!

Use it up . . . Wear it out . . . Make it do . . . Or do without

A United States War message prepared by the War Advertising Council; approved by the Office of War Information; and contributed by this magazine in cooperation with the Magazine Publishers of America.

employees number 250-499, and 27.4% of the plants with one to 249 employees provide food service of some sort.

The manufacturers receiving the survey form were asked to indicate whether or not they were planning expansion or installation of in-plant feeding facilities. Twenty-seven per cent of the largest plants answered in the affirmative. In descending order, according to plant size, the percentage of positive answers from plants employing less than 2500 workers were 22, 16, 9 and 4.

The War Food Administration survey also showed that, by March of this year, at least 6.2 million workers in manufacturing establishments were making regular use of in-plant feeding facilities.

I am not in possession of sufficient data to inform you of the precise results that this has had upon the health, morale and productivity of those workers affected. However, certainly the benefits realized by the worker, industry and the community have been at least commensurate with the time, effort and money spent to provide proper food, food services and dietary guidance for the worker.

Much more needs to be done before the majority of workers will have an opportunity to obtain adequate meals at their places of work. Many new feeding installations and the expansion of many established ones are indicated. The job of educating industrial food service operators on proper procedures of operation and the preparation and service of nutritious meals is a continuing one, as is the most important job of developing good food habits in industrial workers.

The future of the industrial feeding program in the United States is largely dependent upon the amount of understanding and cooperation developed among governmental agencies, industry, labor and community groups and organizations. The establishment of an Inter-Agency Committee on Food for Workers in Washington, with similar committees in the field, represents a major step toward the effective coordination of the industrial feeding activities of the Federal government. Some of the field committees also include representatives of management, labor and local governmental or private agencies. Examples of efforts to coordinate the activities of state groups in the field of nutrition are the State Nutrition Committees, on which, I believe, both the State Health Departments and the Office of Distribution of the War Food Administration are represented, and the State War Councils.

Effective coordination is not possible without mutual understanding of the particular functions and capabilities of each group involved and without consequent willingness on the part of each participant to assume and delegate responsibilities.

The Federal agencies represented on the Inter-Agency Committee have, in the aggregate, the responsibility for seeing that the production of war materials is maintained, that there exists, so far as possible, an equitable distribution of rationed and non-rationed foods, and that the manpower requirements of a nation at war are met. The discharge of this last responsibility in a short labor market necessitates a vigorous program for the conservation and efficient utilization of labor.

To be more specific in relation to the industrial feeding program, the Federal government endeavors to obtain general acceptance of programs and procedures necessary to protect the health of workers in war plants; it is responsible for making available necessary equipment and facilities; for determining certain policies regarding the financing of industrial feeding operations; for recommending war time patterns for plant food services that conserve materials, food, manpower and time and which provide for adequate meals for the workers; it is responsible for food distribution and price control and, along with state and local groups, for recommending nutrition education programs for workers and their families.

Information on any phase of the government's activities and responsibilities in the industrial feeding program can be obtained from any of the regional offices of the Office of Distribution, War Food Administration. Each regional office has a staff of industrial feeding specialists to advise and assist manufacturers, labor and state or local groups.

As indicated previously, no Federal agency or combination of Federal agencies can hope to do the complete job. It is necessary for state and local groups to take on some responsibility. For example, the U. S. Public Health Service can recommend sanitary standards for mass feeding operations, but, except in certain of the plants under the jurisdiction of the Army, Navy and Maritime Commission, state and local regulations are in effect and can be enforced only by officers of the state or local government.

Other state functions in the industrial feeding program include:

1. The development and implementation of effective nutrition education programs for workers and their families. Although the War Food Administration can and does provide ideas and some materials for such programs, it is not in a position to develop and carry through programs adapted to the needs of each state and locality.

2. Determine the prime nutritional problems of the state and locality and the particular dietary needs and peculiarities of the working population.

3. Determine the need for community food service facilities in war congested areas and institute procedures for meeting the need.

4. Promote the more effective utilization of used equipment and facilities to feed workers and their families in congested areas. Many churches, schools and clubs possess food preparation and service facilities which are not being used to capacity.

5. Obtain part-time workers for such food services.

6. Encourage colleges and universities to institute training courses for dietitians and food managers for industrial feeding establishments. The scarcity of such qualified personnel is a major handicap to the industrial feeding program.

7. Each industrial hygiene division of the state health or labor departments should have the full-time services of a staff of industrial feeding specialists. Where qualified specialists are employed by the state, arrangements would be made with the regional office of the Office of Distribution for more participation by the state in the work of surveying industrial plants and making recommendations to plant management. Each state possesses industries, important to that state, which are not engaged in strictly war work and which can not receive first consideration from the War Food Administration. (Our field staff is quite small.) Furthermore, the states should be making provisions for servicing their industries after the war.

The opportunities and need for activities in industrial feeding vary from state to state and from one locality to another. Each state health or labor department should maintain effective liaison with the appropriate office of the Office of Distribution, War Food Administration, and develop with this office mutual understanding of responsibilities and methods of operation.

MEDICINE SURGERY

INDUSTRIAL HEALTH
OCCUPATIONAL DISEASES
TRAUMATIC, INDUSTRIAL

INDUSTRIAL HYGIENE
INDUSTRIAL MEDICINE
& RAILROAD SURGERY

Industrial Medicine | Volume 13 | AUGUST, 1944 | Number 8 | Industrial Medicine

This Month

A PLAN for Medical Care.....A. C. Dick, M.D. 595
—The Scientific Analysis of the Medico-Economics of All Plans
BENIGN Pulmonary Changes in Arc-Welders.....J. A. Groh, M.D. 598
—"Arc-Welder's Siderosis"
TRINITOTOLUENE Poisoning .....Karl R. Luthy, M.D. 601
—Treatment
FELLOWSHIP in Industrial Medicine.....T. Lyle Hazlett, M.D. 603
—School of Medicine, University of Pittsburgh
ROUTINE Eye Treatment Technique.....John J. Prendergast, M.D. 604
—Chrysler Corporation
(With *Edmond L. Cooper, M.D.*)
THE VALUE of Cardiograms.....C. F. Yeager, M.D. 607
—As An Aid to Early Diagnosis in Suspected Cardiovascular Emergency
EXTENDED Medical and Hospital Service in Industry:
—A. A. I. P. & S. Symposium, St. Louis
What is Extended Medical Care?.....Melville H. Manson, M.D. 609
Extended Medical Care Provided by Workers.....Leo Price, M.D. 611
Group and Hospital Insurance Plans.....Neville Pilling 613
Extended Care Under Group Plans.....Frank P. Hammond, M.D. 615
How Far Should the Employer Go?.....Hugh H. Weed 619
Medical Service and the Medical Profession.Roland M. Klemme, M.D. 620
Discussion: *Dr. Newquist, Dr. Carlisle, Dr. Valentine, Dr. Wood, Dr. Pulley, Dr. Moore, Dr. Roberts, Mr. Weed*
INDUSTRIAL Medicine: Public Health: Radiology..... 623
—A.M.A: Sessions..(Reported by C. O. *Sappington, M.D., Dr.P.H.*)
DERMATITIS from Oranges.....Hugh Dierker, M.D., M.P.H.
—Control
INDUSTRIAL Health Forum..... 629
—Questions and Answers
EDITORIAL: The Scientific Approach: Dr. Pilgrim..... 630
POST-GRADUATE Industrial Conference..... 632
—Michigan Industrial Physicians and Surgeons
INDUSTRIAL Hygiene Engineering .....Allen D. Brandt, Sc.D. 639
—In the Army Explosives Manufacturing and Processing Industry
MEMORIAL Issue, *Rocky Mountain Medical Journal*..... 648
—Comment by C. O. *Sappington, M.D., Dr.P.H.*
PAINFUL Back Cases .....M. E. Lowell, M.D. 650
—Examination Form, Western Electric Hospital, Kearny, N. J.
INDUSTRIAL HEALTH and DISEASE:
SUGGESTED Pregnancy Adjustment Plan..Caroline G. Olsen, R.N. 652
—(Including Payroll Insert Card)
INDUSTRIAL Nursing:
MEDICAL and Nursing Services.....Eileen McCarthy, R.N. 663
—Postwar Plans for the Benefit of Industry
EDUCATIONAL Approach .....Elizabeth M. Hanson, R.N. 664
—To Industrial Nursing
OPPORTUNITIES for Leadership.....Mary Parker Follett 665
—for Industrial Nurses

THE 1945 convention of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS and the AMERICAN ASSOCIATION OF INDUSTRIAL NURSES will be held in Chicago, April 23-28, 1945, with headquarters at the Drake Hotel. This will be the thirtieth annual meeting of the A.A.I.P. & S.; the third annual meeting for the AMERICAN ASSOCIATION OF INDUSTRIAL NURSES. . . . ONE of the senators who sponsored the Wagner-Dingell bill is very fond of the expression "appropriate legislation." To the listener with an ear for nuances, there is a suggestion of almost reverence in his voice when he says it. Possibly he has been a little surprised at the great and growing number of people who, with particular reference to the above-mentioned legislation, are asking "appropriate for what?" From the standpoint of anyone who is well educated in American history, and is steeped in the significance of American institutions, it has appeared from the beginning that this bill was an expression of a certain kind of political arrogance. Regardless of the origins or causes of this arrogance, the fact remains that its manifestation in the bill is so preponderantly political as to destroy the value it may have toward solving the problem of medical care. This objection, together with others that have been raised, has more or less forced the proponents of the bill to the defensive attitude that it was drawn as an experiment in theory rather than as an intention of practice. Even the theory, however, remains political. This will be instantly evident to any reader of the "Plan for Medical Care" (page 595), in which DR. DICK translates the whole subject into scientific and practical application. This article should be carefully studied by every member of Congress—particularly with reference to the very simple but exceedingly scientific diagram and its interpretation on page 596: "Line 'A-O' represents a decreasing health status with

—Continued on page 6.

INDUSTRIAL MEDICINE, The Journal of Industrial Health, Occupational Diseases and Traumatic Surgery. Entered as second class mail matter August 28, 1941, at the Post Office at Chicago, Illinois, under the Act of March 3, 1879. Published on the fifth of each month by INDUSTRIAL MEDICINE PUBLISHING COMPANY, Chicago. STEPHEN G. HALOS, President; A. D. CLOUD, Publisher; C. O. SAPPINGTON, M.D., DR. P.H., Editor; CHARLES DRUECK, JR., Secretary and Treasurer; STEPHEN G. HALOS, Advertising and Business Manager. PUBLICATION, EDITORIAL and EXECUTIVE Offices: 605 North Michigan Avenue, Chicago, Illinois. Subscription $5.00 per year in the United States; $5.50 per year in Canada; $6.00 per year in other countries. Single copies 50 cents. Title Registered in United States Patent Office.

Copyright, 1944, by Industrial Medicine Publishing Company, Chicago.

Eastern Representative, H. GORDON HUNTER, 152 West Tenth Street, New York City, Telephone Watkins 9-1067.

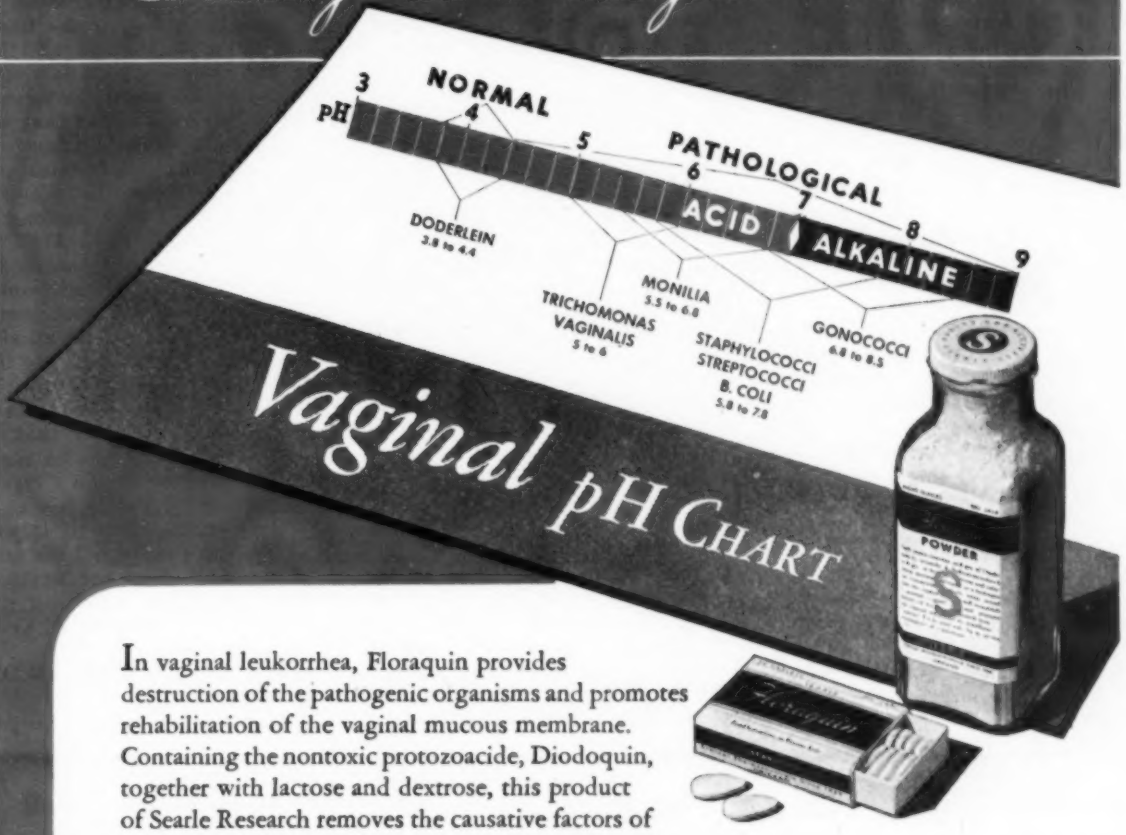
CHANGE OF ADDRESS:

Four weeks' notice required; changes cannot be made without old address as well as new; please furnish postal zone number for new address if city requires it.

INDUSTRIAL MEDICINE is regularly indexed in "The Industrial Arts Index," which can be found in any Public Library.

A.A.I.N., third annual meeting..... 3
A.A.I.P.S., thirtieth annual meeting..... 3
A.M.A. section: meetings, abstracts..... 623
section officers 8
Accidents, care (Thomson)..... 36
Actinic kerato-conjunctivitis 606
Adams, Dr. James M., Stancola plan.... 625
Advantages, company health plans..... 627
Agencies, in industrial health..... 610
Alabama, state health activities..... 28
Andrews, Elizabeth, R.N., NYSNA speaker 14
Ansco medical plan 626
Arc-welder's lung, benign condition..... 599
Arkansas, Industrial Health Committee.. 30
Articles of quality, extracts..... 32
Backs, painful, examination form..... 650
Bauckus, Dr. Herbert, NYSNA speaker.. 14
Bauer, Dr. W. W., on physical fitness.... 16
Binghamton Die & Machine plan..... 626
Bloom, Dr. M. S., Ansco and other plans.. 625
Blue Cross plans, membership estimate... 20
Book reviews: Industrial ophthalmology.. 50
Bristol, Dr. L. D., AMA Section delegate. 8
Budd Company, employment plan..... 663
Burns: eye (Chrysler technique)..... 606
flash (actinic kerato-conjunctivitis).... 606
Burns, general care (Lam)..... 32
Card, for pregnancy plan..... 654
Cardiograms, value in diagnosis..... 607
Cardiovascular emergencies, diagnosis.... 607
Carlisle, Dr. James M., discussion..... 622
Chest x-rays, extent of..... 628
Chrysler, eye treatment technique..... 604
Clinic, Garment Workers Union..... 611
Comment and opinion..... 22
Community medical care plans..... 616
Coronary occlusion, cases..... 607
Costs, of medical care..... 626
Crain, Dr. Rufus, discussion..... 624
Cross, Dr. Roland R., comment..... 22
Cummings, Donald E., Memorial Issue... 648
Cyanides, heat treating with..... 629
Dermatitis: definition, comment..... 656
from lactic acid..... 629
from oranges (Dierker)..... 628
prevention of epidemics (Peck)..... 635
Diagnosis: patch test in, comment..... 658
value of cardiograms in..... 607
Disability factor, acceptance of..... 663
Dr. Pilgrim 630
Dodd, Dr. John M., surgeon, Alaska..... 8
Dunn-McCarthy medical plan..... 626
Dust, magnesium 629
Dysmenorrhea, nitroglycerin in..... 660
Eczema, definition, comment..... 656
Education, industrial nursing..... 664
Electrocardiograph tracings 607
Elements, plan for medical care..... 595
Emerson, Dr. H., AMA Section committee 8
Employer, extent of interest..... 619
Employment, pregnancy during..... 652
Endicott-Johnson medical plan..... 626
Engineering, explosives manufacture.... 639
Englehardt, Dr. Hugo T., discussion..... 624
Enzer, Dr. Norbert, discussion..... 628
Examination, form, painful backs..... 650
Examinations, physical, asked by pickets. 20
Executives, physical fitness programs.... 20
Exhibits, scientific, 1945 meetings..... 660
Explosive manufacture, army industry.... 639
Extended medical service..... 609
provisions wanted by workers..... 613
Eye care, nursing aspects..... 650
Eye treatment technique (Chrysler)..... 604
Eyes, in industry, comment..... 18
Facilities, medical department..... 609
Fellowship in industrial medicine..... 603
Fillmore, Anna, R.N. (eye care)..... 650
Fingers, welding 650
Fitness: in industry (Jacobs)..... 623
physical, Dr. W. W. Bauer, address.... 16
Foreign bodies (Chrysler treatment)..... 604
Forms, pregnancy plan, card..... 654
Free choice, physician, hospital..... 621
Gardner, Dr. H. G., request for exhibits.. 660
Garfield, Dr. Sidney R.: comment..... 24
Kaiser projects 626
Gebhard, Dr. Bruno, health education.... 624
General news 12
Gray, Dr. A. Bernard, quotation..... 650
Gray, Dr. Irving, discussion..... 624
Grease gun injuries (Byrne)..... 32
Group and hospital plans..... 613
Blue Cross plans, description..... 615
Guild, social organization (Weed)..... 619
Hammond, Dr. Frank P. (symposium)... 615
Hayhurst, Dr. Emery R., discussion..... 625
Hazard, radiant energy, welding..... 656
Hazards, explosives manufacture..... 644
Health care, ladies garment workers.... 613
Health departments, state, activities..... 28
Health insurance, unions..... 612
Health program, War Department..... 48
Heat treating, with cyanides..... 629
Hercules Powder, plant visits plan..... 10
Himler, Dr. L. E. (abstract of paper).... 623
psychiatric approach to mental health.. 632
Hirshfield, Dr. J. W., on penicillin..... 639
Hospital benefits, scope..... 616
Icterus index, TNT poisoning..... 602
Illinois, state health activities..... 28
Industrial Hygiene, Illinois Division of... 28
Industrial Hygienist—Wanted..... 52
Industrial medicine, AMA section..... 623
comment 22
fellowship in 603
not much interest in, postwar..... 660
scientific approach to..... 630
Industrial Nurses Section, New York.... 12
Industrial physician: selection, comment.. 22
training of (Oliphant)..... 32
Industrial practice, preferences..... 660
Industry tax, for health programs..... 611
Injuries, grease gun (Byrne)..... 34
Institute of Industrial Health, Wayne U... 12
Jacobs, W. P. (abstract of paper)..... 623
Jocz, Dr. Marion, rehabilitation problems. 636
Jones, Dr. E. M., Endicott-Johnson plan.. 626
Kaiser medical plans (Garfield)..... 626
Kerato-conjunctivitis 656
Kinzer, Major R. E., chest conditions.... 628
Klemme, Dr. Roland M. (symposium)... 620
Kuechle, B. E., comment..... 22
Kuhn, Dr. Hedwig S. (new book)..... 50
Labor, health service desired by..... 611
Lactic acid, dermatitis from..... 629
Ladies garment workers, health care..... 613
Lam, Dr. Conrad R., quotation..... 32
Lanza, Col. A. J., discussion..... 627
Leadership, the nurse in industry..... 665
Leopold, Dr. S. S., benign pneumoconiosis 628
Lewis, Fulton, Jr., comment..... 26
Lowe, Dr. Earl R., letter..... 660
Lowell, Dr. M. E., examination form..... 650
Magnesium dust 629
Management, and good employee relations 16
Manson, Dr. M. H. (symposium)..... 609
Maturity, emotional, comment..... 18
McCann, Dr. James C., discussion..... 626
McGee, Dr. Lemuel C., plant visits plan.. 10
Meadoff, Dr. Nathan, quotation..... 650
Medical care, free, unsuccessful, England. 596
Medical care: plan for (Dr. A. C. Dick).. 595
provided by industrial workers..... 611
Union Health Center 38
what is extended?..... 609
Medical department: scope of activities... 609
scope and interest (O'Hara)..... 42
Medical plan: Ansco, description..... 626
Binghamton Die & Machine plan..... 626
Dunn-McCarthy medical plan..... 626
Endicott-Johnson medical plan..... 626
Kaiser medical plans, description..... 626
Spaulding group medical plan..... 626
Stancola medical plan, description..... 625
Medical service: comment..... 22
extended, definition 610
in industry (O'Hara)..... 40
Medicine, divorced from politics..... 621
Methyl bromide, comment..... 22
Michigan, post-graduate conference..... 632
Mississippi, disease reporting..... 30
Mountin, Dr. J., on relocating physicians 625
Mumford, Eleanor, R.N. (eye care)..... 650
New York State Nurses Association..... 12
Newquist, Dr. M. N., discussion..... 622
New Zealand, social experiments..... 658
Nichols, M. J., R.N., NYSNA speaker.. 14
Nitrogen oxides, explosive manufacture... 640
Nitroglycerin: poisoning, comment..... 23
in treatment of dysmenorrhea..... 660
Normal, emotional stability, comment.... 26
Nurse: relationships in industry..... 664
opportunities for leadership..... 665
Nurses club, Niagara Frontier..... 665
Nurses organizations, Alabama..... 28
Nurses, visiting or community (O'Hara).. 46
Nursing services, postwar..... 663
Ocular pathology (Pike)..... 639
O'Hara, Dr. Dwight, quotation..... 40
Oliphant, Dr. J. T., quotation..... 32
Ophthalmic procedures (Chrysler)..... 604
Ophthalmologic services, need for..... 18
Ophthalmology, industrial (Kuhn)..... 50
Oranges, dermatitis from (Dierker)..... 628
Organization, of plan for medical care... 596
Osborn, Dr. S. H., AMA Section delegate 8
Outline, of medical care (Dick)..... 595
Paper, government use limitation..... 26
Patch test: comment..... 658
preplacement, comment 658
Payroll insert, pregnancy plan..... 656
Payroll tax, for health program..... 38
Peck, Dr. S. M., on dermatitis prevention 635
Penicillin, clinical uses (Hirshfield)..... 639
Percentages, opinion, medical care..... 618
Permanente Foundation, *Medical Bulletin* 650
Personal news 8
Personnel, trained safety, needed..... 656
Petrie, Dr. L. M., address..... 10
Pharis, Dr. Crit, NYSNA meeting..... 14
Pharmaceuticals, consumption 656
Physician, family, relation to..... 609
Pike, Dr. Melvin H., on ocular pathology. 639
Pilling, Neville (symposium)..... 613
Plant visits, Hercules Powder Company.. 10
Policies, employment, in pregnancy..... 652
Politics, no place in medicine..... 621
Pregnancy, adjustment plan..... 652
Prepayment medical care plans..... 613
Preplacement patch test..... 658
Preusser, Mrs. R. D., NYSNA speaker.. 14
Price, Dr. Leo (symposium)..... 611
Principles, fundamental, nursing..... 665
Procedures, ophthalmic (Chrysler)..... 604
Procedures, psychologic (Himler)..... 623
Production, nurse helps increase..... 668
Psychologic technics (Himler)..... 623
Public health, AMA abstracts..... 623
Pullen, Dr. R. L., on bagasse disease..... 624
Pulley, Dr. Hamlet C., discussion..... 622
Pulmonary changes, siderosis, benign..... 598
Questionnaire survey, postwar medicine.. 660
Radiology, AMA section, abstracts..... 623
Records, for first aid room..... 629
Rehabilitation problems (Marion)..... 636
Roberts, Dr. Kingsley, discussion.....622, 624
Rocky Mountain M. J., Memorial Issue.... 648
Rowntree, Col. Leonard, discussion..... 624
Safety glasses, wearing..... 629
Safety, nurse relationship..... 665
Sappington, AMA Section vice-chairman. 8
Sawyer, W. A.: AMA Section secretary.. 8
discussion 624
School of Nursing, Buffalo..... 665
Scientific approach to industrial medicine 630
Scientific exhibits, request for..... 660
Seeger, Dr. S. J., "Amphitheater"..... 8
Selby, Dr. C. D., x-ray chest examination 627
Self discipline, education in..... 658
Self respect, price of, comment..... 23
Services, Illinois Industrial Hygiene..... 28
Shangri-La, social, New Zealand..... 658
Siderosis: arc-welder's 598
x-rays, no known silica exposure...599, 600
not health hazard..... 601
Smith, Dr. F. C., quotation..... 48
Soloway, Dr. H. M., consultant..... 8
Solvents, Literature Studies, reprints.... 12
Spaulding group medical plan..... 626
Splints (Thomson) 36
Stancola medical plan 625
Standards of approval, Blue Cross plans.. 616
State health department activities..... 28
Stebbins, Dr. E., AMA Section Chairman. 8
Stenosing tendovaginitis 650
Sterile eye procedure (Chrysler)..... 606
Sterility, no evidence of, in welders..... 656
Survey, postwar medical needs..... 660
Symposium, Medical and Hospital Service 609
Symptoms, cardiovascular 607
Tanning, abandonment of..... 34
Tax, payroll, for health program..... 38
Tendovaginitis, stenosing 650
Tension, in welding..... 650
Thomson, Dr. J. E. M., quotation..... 36
Training, of industrial physicians..... 32
Trinitrotoluene poisoning, treatment..... 601
Trostler, Dr. I. S., discussion..... 628
Ultra-violet, exposure 656
Union Health Center: annual report..... 38
description 612
report, 1943 608
Union, London, trades, requests..... 20
Valentine, Dr. James, discussion..... 622
Wagner bill: physicians' "freedoms"..618, 658
comment 26
Wanted: Industrial Hygienist..... 52
Wars, none on medical problems..... 650
Wayne University Medical Center..... 12
Weed, Hugh H. C. (symposium)..... 619
Welding, radiant energy hazard..... 656
Welding, tension 650
Western Electric hospital, Kearny (form) 650
Wilzbach, Dr. Carl A., discussion.....624
Wittmer, Dr. John J., discussion..... 626
Women, pregnancy procedure..... 654
Wood, Dr. William G., discussion..... 622
Workers, medical care provided by..... 611

Restores Vaginal pH . . . . Destroys the Pathogenic Flora



In vaginal leukorrhea, Floraquin provides destruction of the pathogenic organisms and promotes rehabilitation of the vaginal mucous membrane. Containing the nontoxic protozoacide, Diodoquin, together with lactose and dextrose, this product of Searle Research removes the causative factors of leukorrhea and restores normal vaginal physiology.

Floraquin brings about the establishment and maintenance of an acidity (pH 4.0) unfavorable to vaginal infections. Its lactose and dextrose provide the necessary substrate for the production of lactic acid, a condition which enhances destruction of pathogenic organisms and promotes normal flora—Doderlein's Bacillus.

For Office Insufflation—Floraquin Powder in bottles of 1 oz. and 8 oz.

For Home Routine—Floraquin Tablets in boxes of 24

G·D·SEARLE & CO.

ETHICAL PHARMACEUTICALS SINCE 1888

CHICAGO

New York Kansas City San Francisco

SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

Floraquin is the registered trademark of G. D. Searle & Co.

decreasing income. (Thirty years' experience in England under a panel system of medicine shows that giving free medical care to this group does not result in health improvement.) Line 'A-C' does not rise with increased income or increased expenditures for any single component of health after income reaches 'B'." These are facts, and the conditions they represent cannot be overcome by being ignored. . . . DR. GROH'S "Benign Pulmonary Changes in Arc-Welders" (page 598) is timely, in view of the scare-head implications that are possible from the careless and indiscriminate coupling of siderosis with "silicosis and other ailments." "All evidence to date indicates that arc-welder's siderosis is not a hazard to the health of a workman, but a serious potential menace to the mental stability of the welder if not soundly evaluated by the physician and intelligently interpreted" to the welder himself and to his prospective employer. . . . DR. LUTHY writes, with reference to his "Treatment of Trinitrotoluene Poisoning" (page 601): "I have been doing considerable research on the care and management of TNT workers, and am now ready with my first observation of employees in contact with this chemical. The research has been carried on over a period of eight months, and I feel that the results obtained are worthy of presentation to the profession as a whole to see if the treatment, applied elsewhere, will give the same good results that I have experienced. Before beginning treatment under our present routine we were transferring about four workers a month from contact with TNT—about half of these permanently. Since instituting my regime in November, 1943, it has not been necessary to make a single transfer from contact with TNT. All trained workers have remained on the job for which they were trained and all returned to normal, all symptoms cleared, and their general feeling of well-being returned" . . . . DR. YEAGER (page 607) is one of the first industrial physicians to write about the use of the electrocardiograph as an aid in industrial medical practice. . . . THE A.A.I.P. & S. Symposium on "Extended Medical and Hospital Service in Industry" (page 609) developed almost a complete text on this important subject. Interesting—and challenging, as evidenced by the discussion (page 622)—was MR. WEED'S point of view. The abstracts of the A.M.A. papers on "Variations in Industrial Medical Service Plans" (page 625) conclude a round-up of experience and opinion on this subject which would almost sustain a special issue. . . . THE "Opportunities for Leadership, for Nurses in Industry" (page 665) was submitted by IRENE H. CHARLEY, Nursing Superintendent, Central Bureau for Insurance Nursing, London, who obtained a manuscript copy—"the only copy in this country"—and had it published in the English *Nursing Mirror*. She comments: "Mary Parker Follett must have been an extraordinary woman." She must, indeed, for her lecture, given 18 years ago, might well have been inspired by the conditions and opportunities of the present time. . . . DR. C. F. N. SCHRAM has something, in his suggestion that the term "first aid" should be discontinued. Since the suggestion applies to physicians and surgeons as well as nurses, we include here his letter to JOANNA JOHNSON, R.N., editor of INDUSTRIAL NURSING as follows:

I HAVE just finished a fairly thorough perusal of the May issue of INDUSTRIAL NURSING and I think you have a wonderful magazine. As it is new, I am taking the liberty of making a suggestion. I think I have expressed myself to you before regarding the use of the term "First Aid" when speaking of that which a physician or nurse is doing in a professional way. Industrial nursing never will have the standing to which it is entitled as long as we allow the term "First Aid" to even appear in printed form, on the industrial medical department door, plant directions to that door, stationery, or in industrial nursing and medical publications. I note that one nurse spent considerable time in comparing the wages or salary of a registered nurse with that of the average worker, but he made exactly that comparison "First Aid" vs. "Worker." Please feel at liberty to publish this letter if it will help you in any way to sell the idea that "First Aid" does not apply to the work of anyone who took three or more years to fit himself or herself for a profession.

—C. F. N. SCHRAM, M.D.
Medical Director,
Tennessee Eastman Corporation.

Alkalol Company, The 652
Alkalol
Aloe, A. S., Company 16
Universal Operating Table
American Optical Company 633
Goggles, Helmets, Respirators
American Sterilizer Company 31
Hygeaire Sanitation
Ames Company, Inc. 20
Clinitest
Anacin Company, The 657
Anacin
Anglo-French Laboratories, Inc. 12
Hepvisc
Bausch & Lomb Optical Company 647
Safety Eyewear
Becton, Dickinson & Company 34
B-D Syringes
Bisodol Company, The 649
BiSoDoL
Breck, John H., Inc. 641
Breck Water Resistant Cream
Breon, George A., & Company 36
Bexiver Solution
Bristol-Myers Company 638
Trushay
Burdick Corporation, The ..... 3rd Cover
Ultraviolet Irradiation
Ciba Pharmaceutical Products, Inc. ..... 4th Cover
Privine
Denver Chemical Mfg. Company, The 18
Antiphlogistine
Denver Chemical Mfg. Company, The 46
Galatest-Acetone
Desitin Chemical Company 28
Desitin Ointment
Dixie Cup Company 23
Dixie Cups
Dome Chemicals, Inc. 48
Domeboro Tabs, Daxalan, Domolene
Drug Products Co., Inc., The 30
Sulfarea; Sclorea
DuPont Company 651
Patterson Screen
DuPont Company 643
Protek
Electro-Physical Laboratories 631
EPL Electrocardiograph
General Cellulose Co., Inc., The 50
Cellulose Wipes
Health Cigar Co., Inc. 14
Sano Products
Holland-Rantos Company, Inc. 39
Koromex Jelly and Koromex Cream
Hynson, Westcott & Dunning, Inc. 632
Mercurochrome
Ille Electric Corporation 40
Portable Unit for Hydromassage
Industrial Drug Supplies, Inc. 24
Cevasal
Industrial Medicine Book Company 22
"The Mind of the Injured Man"
International Cellucotton Products Company 42
Kotex
Iodine Educational Bureau, Inc. 636
Iodine
Irwin, Neisler & Company 33
Osmopak
Johnson & Johnson 662
Red Cross Plaster
Johnson & Johnson 1
"ZO" Adhesive Plaster
Kny-Scheerer Corporation 32
Surgical Instruments
Lever Brothers Company 51
Vimms
Lily-Tulip 656
Paper Cups
Machlett Laboratories, Inc. 49
Ray Tubes
McNeil Laboratories, Inc. ..... 2nd Cover
Aspirocal Comp.
Medicone Company 41
Derma Medicone
Merck & Co., Inc. 15
Pyridium
Merrell, The Wm. S., Company 9
Oravax
Merrell, The Wm. S., Company 661
Sulfa-Ceepryn Cream
Milburn Company, The 53
Ply Liquid; Ply Cream
Mine Safety Appliances Company 21
MSA Colored Filters
Mine Safety Appliances Company 25
Fend, Creams and Lotions
National Oil Products Company 37
Acidolate Skin Cleanser
Numotizine, Inc. 26
Nuzine Ointment
Nutrition Research Laboratories 44, 45
Ertron
Occy-Crystine Laboratory 22
Occy-Crystine
Parke, Davis & Company 7
Combex with Vitamin C Kapseals
Patch, The E. L., Company 30
Gadoment
Pelton & Crane Company, The 38
Brass Sterilizers
Picker X-Ray Corporation 2
Mobile X-Ray units
Reed & Carnrick 645
Protonuclein
Reynolds, R. J., Tobacco Company 634
Camel Cigarettes
Schmid, Julius, Inc. 29
Ramses Diaphragm
Searle, G. D., & Company 5
Floraquin
Sharp & Dohme 35
Lyovac
Sharp & Dohme 637
Vacagen
Shield Laboratories 659
Riasol
Smith, Kline & French Laboratories 17
Benzedrine Inhalers
Sperti, Inc. 27
Biodyne Ointment
Squibb, E. R., & Sons 54
Vitamin Capsules
Stearns, Frederick, & Company 19
Neo-Synephrine Hydrochloride
Stepan Chemical Company, The 13
Skin Cleanser
Upjohn 11
Mereresin
West Disinfecting Company 653
Durma-Gard, Protective Garments
White Laboratories, Inc. 47
Neo Multi-Vi Capsules
Whittaker Laboratories, Inc. 654
Cooper Creme
Willson Products, Incorporated 635
Goggles, Respirators, Gas Masks
Winthrop Chemical Company, Inc. 43
Sulfathiazole Urea Ointment
Wyeth, John, & Brother 655
Amphogel Tablets

WHAT IS NEEDED...

VACATIONS OR VITAMINS?

• When production lags in hot weather—when workers perspire excessively and become nervous and irritable—vitamin replenishment may be indicated to combat symptoms leading to slow-ups and absenteeism.

• Since favorable results have been reported from administration of ascorbic acid in cases of profuse perspiration, it is possible that supplements of other vitamins may be worthy of trial.[1] Excretion of riboflavin, thiamine, pantothenic acid and ascorbic acid in hot environments may seriously affect persons sustained on average American diets.

• Three COMBEX* with Vitamin C Kapseals* daily, taken with meals, are suggested to prevent vitamin deficiency and resulting losses from excessive perspiration.

*Trade-marks Reg. U. S. Pat. Off.

Each COMBEX with Vitamin C Kapseal contains: Vitamin B_1, 3 mg.; Vitamin B_2, 3 mg.; Nicotinamide, 10 mg.; Pantothenic acid, 3 mg.; Vitamin C, 30 mg.; with other components of the Vitamin B Complex from liver.

[1] Cornbleet, T., Kirch, E. R., and Bergeim, O., Jl. A. M. A., 122: 426, June 12, 1943

ARMY E NAVY

PARKE, DAVIS & COMPANY

DETROIT, MICHIGAN

INDUSTRIAL MEDICAL and RAILWAY SURGICAL ASSOCIATIONS

Industrial Medicine
Reg U. S. Pat. Off.
Official Publication

American Association of Industrial Physicians and Surgeons

THE object of this Association shall be to foster the study and discussion of the problems peculiar to the practice of industrial medicine and surgery; to develop methods adapted to the conservation of health among workers in the industries; to promote a more general understanding of the purposes and results of the medical care of employees, and to unite into one organization members of the medical profession specializing in industrial medicine and surgery for their mutual advancement in the practice of their profession.

Officers

President:
FREDERICK W. SLOBE, M.D.,
Chairman, Committee Industrial Health,
Illinois State Medical Society,
2024 South Western Avenue,
Chicago 8, Illinois.

President-Elect:
MELVIN N. NEWQUIST, M.D.,
The Texas Company,
New York, New York.

First Vice-President:
LOYAL A. SHOUDY, M.D.,
Bethlehem Steel Company,
Bethlehem, Pennsylvania.

Second Vice-President:
HENRY S. BROWN, M.D.,
Michigan Bell Telephone Company,
Detroit, Michigan.

Treasurer:
EDWARD C. HOLMBLAD, M.D.,
Railway Express Agency,
28 East Jackson Boulevard,
Chicago, Illinois.

Managing Director:
EDWARD C. HOLMBLAD, M.D.,
Railway Express Agency,
28 East Jackson Boulevard,
Chicago, Illinois.

Directors, 1943-1945

RICHARD P. BELL, M.D.,
Cleveland Diesel Engine Division,
General Motors Corporation,
Cleveland, Ohio.

EDWARD P. HELLER, M.D.,
C. B. & Q. Railway,
Kansas City, Missouri.

WILLIAM A. SAWYER, M.D.,
Eastman Kodak Company,
Rochester, New York.

THEODORE L. STORY, M.D.,
American Optical Company,
Southbridge, Massachusetts.

BEVERLY L. VOSBURGH, M.D.,
General Electric Company,
Schenectady, New York.

JOHN J. WITTMER, M.D.,
Consolidated Edison Co. of New York, Inc.,
New York, New York.

Directors, 1944-1946

HARVEY BARTLE, M.D.,
Pennsylvania Railroad,
Philadelphia, Pennsylvania.

E. A. IRVIN, M.D.,
Cadillac Motor Division, General Motors Corporation,
Detroit, Michigan.

R. F. KURZ, M.D.,
Emerson Electric & Mfg. Company,
St. Louis, Missouri.

F. E. POOLE, M.D.
Lockheed Aircraft Corporation,
Burbank, California.

H. A. VONACHEN, M.D.,
Caterpillar Tractor Company,
Peoria, Illinois.

A. H. WHITTAKER, M.D.,
Detroit Industries,
Detroit, Michigan.

PERSONAL

THE Section on Preventive and Industrial Medicine and Public Health of the A.M.A., on Friday, June 16, elected the following officers: Chairman, DR. E. L. STEBBINS, New York; vice-chairman, DR. C. O. SAPPINGTON Chicago; secretary, DR. W. A. SAWYER, Rochester, New York; executive committee: DR. HAVEN EMERSON, New York; DR. JOSEPH W. MOUNTIN, U. S. P. H. S., Washington, D. C., and DR. E. L. STEBBINS, New York; delegate, DR. STANLEY H. OSBORN, Hartford, Connecticut; alternate, DR. LEVERETT DALE BRISTOL, New York.

THE board of directors of the Milwaukee Children's Hospital resolves that, in appreciation of DR. SEEGER'S long and loyal service as chief of staff, and in recognition of his outstanding ability as a surgeon and his never failing interest in making this hospital a center of medical education, the addition which was inspired by his far reaching vision be called in his honor the DR. STANLEY JOSEPH SEEGER AMPHITHEATER." With the unveiling of a plaque thus inscribed on June 8, the board and staff members of the Milwaukee Children's Hospital assisted in the dedication of the amphitheater which was placed in use in May, 1939, and in naming it in honor of their former chief of staff, DR. STANLEY J. SEEGER, who now lives in Texarkana, Texas.

—*Wisconsin Med. J.*, July, 1944.

DR. HERMAN M. SOLOWAY, who has been in charge of the Illinois Health Department's venereal disease control program since 1938, re-entered private practice as of July 1, but will be with the Department on a part-time basis, serving as Venereal Disease Consultant to Industry in the Division of Industrial Hygiene.

DR. JOHN M. DODD, SR., left Ashland recently to become the physician and surgeon for the L. G. Wingard Canning Company, canners of salmon at Ugashik, Alaska, located on the northern shore of the Alaskan peninsula at Bristol Bay. In this way, he wishes to do his part for the war food supply. DR. DODD will be

Industrial Medicine
Reg U. S. Pat. Off.
Official Publication

American Association of Industrial Physicians and Surgeons

1944-1945 Committees

Committee on Past Presidents:
LOYAL A. SHOUDY, M.D., Chairman.
DANIEL L. LYNCH, M.D.
C. D. SELBY, M.D.
C. H. WATSON, M.D.

Auditing:
THEODORE L. STORY, M.D., Chairman.
BENJAMIN FREES, M.D.
G. H. GEHRMANN, M.D.

Certification:
HENRY S. BROWN, M.D., Chairman.
WILLIAM A. SAWYER, M.D.
STUART F. MEEK, M.D.
JOSEPH H. CHIVERS, M.D.

Component Societies:
A. H. WHITTAKER, M.D., Chairman.
JAMES M. CARLISLE, M.D.
FLOYD SHAFFER, M.D.
LOUIS W. SPOLYAR, M.D.

Finance:
JOHN J. WITTMER, M.D., Chairman.
T. LYLE HAZLETT, M.D.
M. N. NEWQUIST, M.D.
F. E. POOLE, M.D.

Committee on Graduate Fellowships:
T. LYLE HAZLETT, M.D., Chairman.
RUTHERFORD T. JOHNSTONE, M.D.
M. H. KRONENBERG, M.D.
J. J. WITTMER, M.D.
DANIEL L. LYNCH, M.D.
LOYAL A. SHOUDY, M.D.

History:
LOYAL A. SHOUDY, M.D., Chairman.
OTTO P. GEIER, M.D.
C. F. N. SCHRAM, JR., M.D.

Medical Education:
MILTON H. KRONENBERG, M.D., Chairman.
HARVEY BARTLE, M.D.
T. LYLE HAZLETT, M.D.
SARAH I. MORRIS, M.D.
F. E. POOLE, M.D.
F. J. WAMPLER, M.D.

Membership:
C. O. SAPPINGTON, M.D., Chairman.
RICHARD P. BELL, M.D.
H. G. LAFFERTY, M.D.
J. NEWTON SHIRLEY, M.D.

Nutrition:
H. A. VONACHEN, M.D., Chairman.
WILLIAM A. SAWYER, M.D.
T. LYLE HAZLETT, M.D.

Policy and Plan:
F. E. POOLE, M.D., Chairman.
HAROLD A. VONACHEN, M.D.
HARVEY BARTLE, M.D.

Psychosomatic Medicine:
E. A. IRVIN, M.D., Chairman.
C. D. SELBY, M.D.
HARVEY BARTLE, M.D.
LYDIA G. GIBERSON, M.D.
JAMES H. STERNER, M.D.

Publications and Editorials:
EDWARD P. HELLER, M.D., Chairman.
C. O. SAPPINGTON, M.D.
M. H. MANSON, M.D.
MAX R. BURNELL, M.D.
CAREY P. MCCORD, M.D.

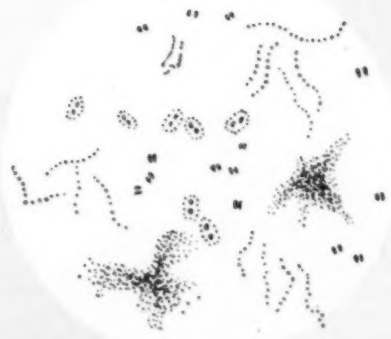
Qualifications:
FRANK T. MCCORMICK, M.D., Chairman.
DANIEL L. LYNCH, M.D.
RICHARD E. NEWBERRY, M.D.
CHARLES F. ENGEL, M.D.

Revision of Constitution and By-Laws:
RUDOLPH F. KURZ, M.D., Chairman.
BEVERLY L. VOSBURGH, M.D.
ROBERT A. KEHOE, M.D.

Venereal Disease:
C. H. WATSON, M.D., Chairman.
HAROLD A. VONACHEN, M.D.
HARVEY BARTLE, M.D.

1945 Annual Meeting:
MELVIN N. NEWQUIST, M.D., Chairman.

WHAT ARE THE FACTS CONCERNING ORAL CATARRHAL VACCINES?



In a nation at war, manpower is the most critical of all commodities.

Therefore, particular attention has been focused on the common cold, because of its yearly toll of more than 45,000,000 man-days of working time.

Much has been written in the medical literature — both pro and con — concerning the value of oral catarrhal vaccines in preventing colds and their complications. However, the vast preponderance of evidence, based on controlled clinical studies, shows that oral vaccination *does* reduce illness and absenteeism resulting from colds.

ORAVAX

Brand of Oral Catarrhal Vaccine

REDUCES INCIDENCE, SEVERITY AND DURATION OF COLDS

Oravax is a small, white, enteric-coated tablet containing a wide range of antigens selected for their ability to build protection against organisms of secondary invasion responsible for debilitating sequelae of the common cold.

Published Clinical Reports on Oravax

Complete freedom from colds in 81.92% of Oravax group; in 12.34% of control group.
J. M. A. Georgia 28:332-4 (1939)

In Oravax group, 3.7 days lost per person per cold; in control group, 6.75 days.
Canad. M. A. J. 41:493 (1939)

Oravax 85% to 90% effective against loss of time.
Indust. Med. 8:350-1 (1939)

70.2% of Oravax group free from colds; 7.2% of placebo group.
Indust. Med. 9:530-3 (1940)

***Incidence* of severe colds in Oravax group 1/5 that in placebo group; *duration* of severe colds 0.6 day in Oravax group, 3.4 days in control group.**
Journal-Lancet 60:319-24 (1940)

Oravax is practical, easy to administer, costs less than 1¢ per day per employe. Write for sample and full information, including a complete clinical evaluation of oral vaccination incorporating all published work, both pro and con. Ask for Oravax industrial brochure.

MERRELL
116th Year

Trademark "Oravax" Reg. U. S. Pat. Off.

THE WM. S. MERRELL COMPANY • CINCINNATI, U. S. A.

Association for the Advancement of Industrial Medicine and Surgery Inc.

PURPOSE: To disseminate accurate medical knowledge in reference to the diagnosis and treatment of all conditions arising out of and in the course of employment.

Officers

RUSSELL C. KIMBALL, M.D., President, 4 Irving Place, New York.
J. HUDSON BLAUVELT, M.D., Vice-President, 80 Maiden Lane, New York.
ROBERT BOGAN, M.D., Recording Secretary, 2 West 75th Street, New York.
JOSEPH L. RAMIREZ, M.D., Treasurer, 30 Fifth Avenue, New York.
MR. JOHN J. BLACKFORD, Executive Secretary, 370 Lexington Avenue, New York.

Executive Council

Term Expires 1945
HALCYON HALSTEAD, M.D., Pelham Manor, New York.
ANTHONY AVATA, M.D., Hartford Accident & Indemnity Company, New York.
JOHN J. BROZDOWSKI, M.D.
Term Expires 1946
FREDERICK H. ALBEE, M.D., New York.
COL. WILLIS W. LASHER, West Point, New York.
JOHN J. WITTMER, M.D., Consolidated Edison Company, New York.
Term Expires 1947
T. WALLACE DAVIS, M.D. Borden Company, New York.
ROBERT F. BARBER, M.D.,
HARRY V. SPAULDING, M.D., General Accident Co., New York.

Component Society of the American Association of Industrial Physicians and Surgeons.

Central States Society of Industrial Medicine and Surgery

Officers 1944-45

FRED M. MILLER, M.D., Chicago, President.
H. W. WELLMERLING, M.D., Bloomington, Illinois, President-Elect.
LEWIS M. OVERTON, M.D., Des Moines, Iowa, Vice-President.
FRANK P. HAMMOND, M.D., Chicago, Secretary-Treasurer.

Board of Governors

Terms to Expire 1945.
URBAN E. GEBHARD, M.D., Milwaukee
WALTER J. JONES, M.D., La Crosse, Wisc.
MELVIN L. HOLE, M.D., Danville, Ill.
Terms to Expire 1946.
C. O. SAPPINGTON, M.D., Chicago
HAROLD A. VONACHEN, M.D., Peoria, Ill.
D. ORIS CONLEY, M.D., Streator, Ill.
Terms to Expire 1947.
W. M. HARTMAN, M.D., Macomb, Ill.
ROLAND A. JACOBSON, M.D., Chicago
ROBERT M. GRAHAM, M.D., Chicago

Component Society of the American Association of Industrial Physicians and Surgeons.

Hawaiian Society of Industrial Physicians and Surgeons

IVAR LARSEN, M.D., Kohala, Hawaii, President.
C. L. CARTER, M.D., Haina, Hawaii, Vice-President.
H. M. PATTERSON, M.D., Olaa, Hawaii, Secretary-Treasurer.

Component Society of the American Association of Industrial Physicians and Surgeons.

American Association of Railway Surgeons

J. L. CROOK, M.D., Jackson, Tenn. President.
HAROLD A. SPILMAN, M.D., Ottumwa, Ia. Vice-President.
A. J. O'BRIEN, M.D., Ironwood, Mich. Vice-President.
JOHN J. BRANDABUR, M.D., Huntington, W. Va., Vice-President.
T. L. HANSEN, M.D., Chicago. Treasurer.
R. B. KEPNER, M.D., Chicago. Secretary.

Executive Board

A. R. METZ, M. D., Chicago, Chairman
JOHN R. NILSSON, M.D., Omaha, Neb.
W. J. LANCASTER, M.D., Wilmington, N. C.
D. B. MOSS, M.D., Palmyra, Mo.
IRVING S. CUTTER, M.D., Chicago.
HARVEY BARTLE, M.D., Philadelphia.

gone for four months, returning to Ashland after the close of the salmon canning season. Upon arriving in Alaska, he plans to meet DR. JOHN DODD, JR., who occupies a similar position as physician for a canning company located on the southern shore. In 1936, DR. DODD was elected a life member of the State Medical Society. He served as president of the State Society in 1912.

—*Wisconsin Med. J.*, July, 1944.

DR. L. M. PETRIE, Director, Industrial Hygiene Service, Georgia Department of Public Health, was invited to talk at the annual meeting of the Georgia Federation of Labor at Tybee Beach Hotel. After his address the following resolution was adopted: "Whereas tuberculosis is one of the most important causes of sickness and death in the United States today, and whereas routine chest x-ray examinations are one of the most important steps in the discovery and control of tuberculosis cases for prevention of spread of this disease, and whereas the Georgia Department of Public Health has developed an efficient tuberculosis control program for industry, therefore, be it resolved that the Georgia Federation of Labor endorse the program of the Georgia Department of Public Health and recommend the establishment of routine chest x-ray examinations among employer and employee groups in industry as rapidly as possible. Amended by the resolution committee to be made applicable to the school system of Georgia."

DR. LEMUEL C. MCGEE, Medical Director, Hercules Powder Company, in order that local doctors in the areas where Hercules plants are situated may have as much information as possible about the working conditions to which their patients employed in those plants may be exposed, has inaugurated an educational system of plant visits to acquaint them with the chemicals and processes being used. A visit of this type at the local Hercules plant was made on June 21 by DR. WILLIAM H. ALLEN and DR. MITCHELL WASSERMAN, of Mansfield, Massachusetts, and others, including DR. JESSE W. BATTERSHALL, DR. DWIGHT O'HARA, the latter Chairman of the Committee on Industrial Health of the Massachusetts Medical Society. MR. D. A. BUNCE, plant superintendent, and MR. W. S. TRAYLOR, safety supervisor, were the hosts. DR. MCGEE and MR. R. F. SCHLAANSTINE, director of operations, came from Wilmington to attend; and MR. MANFRED BOWDITCH, Director of the Massachusetts Division of Occupational Hygiene, was accompanied by DR. TABERSHAW and MR. PIERCE to observe the changes in plant operation which had been worked out by the Hercules Powder Company and the Massachusetts Division of Occupational Hygiene to improve the working conditions in this plant.

New York State Society of Industrial Medicine

1942-43 Officers

O. A. BRENENSTUHL, M.D., President.
P. K. MENZIES, M.D., Vice-President.
PHILIP L. FORSTER, M.D., Treasurer.
FRANK E. REDMOND, Executive Secretary.

Directors

DR. H. H. BAKER, Rochester. 423 Granite Bldg.
DR. O. A. BRENENSTUHL 845 Hamilton St., Albany.
DR. PHILIP L. FORSTER, Albany. 367 State St.
DR. CHAS. D. SQUIRES, Binghamton 28 Conklin Ave.
DR. WILLIS C. TEMPLER, Corning Corning Glass Works.
DR. FRANCIS J. RYAN, Syracuse. New York State Railways.
DR. B. J. SLATER, Rochester. Eastman Kodak Company.
DR. L. W. LOCKE, Utica. 288 Genessee St.
DR. A. M. DICKINSON, Albany. New York Central R. R.
DR. M. S. BLOOM, Binghamton. Dunn & McCarthy.
DR. E. MACD. STANTON, Schenectady. American Locomotive Company.
DR. F. N. C. JERAULD, Niagara Falls. 723 Erie Ave.
DR. DONALD C. O'CONNOR, Buffalo. International Railways. American Radiator Co.
DR. RICHARD S. FARR, Syracuse. Consulting Orthopedist.
DR. C. W. WOODALL, Schenectady. 146 Barrett St.
DR. JOHN L. NORRIS, Rochester. Eastman Kodak Company, Kodak Park
DR. PAUL B. JENKINS, Binghamton. 141 Main St.
DR. E. A. VANDER VEER, Albany. 28 Eagle St.
DR. OTTMAR W. FREY, Oneida. Oneida Ltd.
DR. HAROLD C. LYMAN, Utica. 250 Genessee St.
DR. P. K. MENZIES, Syracuse. 511 Medical Arts Bldg.
DR. FRED C. SABIN, Little Falls. 23 W. Ann. St.
DR. REEVE M. BROWN, Buffalo. Chevrolet-Motor and Axle Div. of General Motors.

The Industrial Doctor

Official Section of the New York State Society of Industrial Medicine. Now combined with INDUSTRIAL MEDICINE

Published under supervision of the Ways and Means Committee of the New York State Society of Industrial Medicine. Editorial office, F. E. REDMOND, Managing Editor, 361 Delaware Avenue, Buffalo, N. Y. Articles herein do not necessarily reflect the opinion or policy of this journal nor of the New York State Society of Industrial Medicine.

Editorial Board

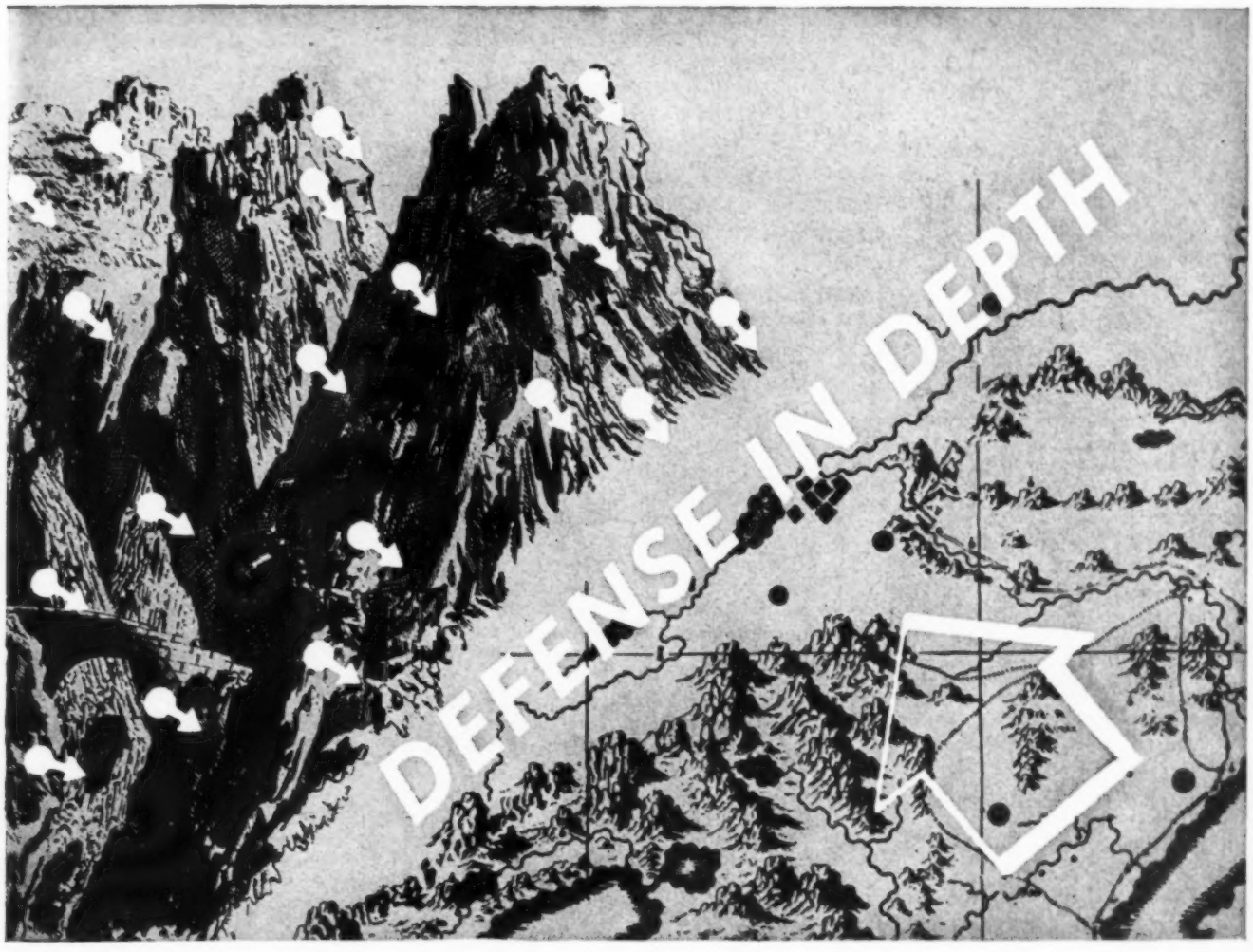
B. J. SLATER, M.D. M. S. BLOOM, M. D.
REEVE M. BROWN, M.D.
L. W. LOCKE, M.D. FRED C. SABIN, M.D.
PAUL B. JENKINS, M.D.
WILLIS C. TEMPLER, M.D.
A. M. DICKINSON, M.D.
P. L. FORSTER, M.D.
CHAS. D. SQUIRES, M.D.
RICHARD S. FARR, M.D.
OTTMAR W. FREY, M.D.
HAROLD C. LYMAN, M.D.
P. K. MENZIES, M.D.
C. W. WOODALL, M.D.
FRANCIS J. RYAN, M.D.
D. C. O'CONNOR, M.D.
F. N. C. JERAULD, M.D.
E. MACD. STANTON, M.D.
E. A. VANDER VEER, M.D.
H. H. BAKER, M.D.
O. A. BRENENSTUHL, M.D.
JOHN L. NORRIS, M.D.

FRANK E. REDMOND, Managing Editor
361 Delaware Ave., Buffalo New York.

Georgia Association of Industrial Surgeons

BENJAMIN H. MINCHEW, M.D., Waycross President
J. W. SIMONS, M.D., Brunswick Vice-President
C. F. HOLTON, M.D., Savannah Secretary-Treasurer

Component Society of the American Association of Industrial Physicians and Surgeons



MERCRESIN

Mercresin* attacks quickly and forcefully to prevent commonly encountered bacteria from establishing a "bridgehead of infection." Its good penetrative power is unhampered by serum, fatty materials, or epithelial debris—and so it provides defense in depth.

The double striking power of Mercresin comprises the bactericidal force of a mixture of cresols with the bactericidal and bacteriostatic action of an organic mercurial. Its wide range of germicidal effectiveness includes the gram-negative as well as the gram-positive organisms.

Despite the power, speed, and extensive germicidal sweep of Mercresin, its tissue-irritating properties are negligible. Efficiency and gentleness have made Mercresin a germicide of choice in general office practice as well as in the operating room; in gynecology, rhinolaryngology, and other specialties.

Tincture Mercresin and Tincture Mercresin (Stainless) are available in 4 ounce, pint, and gallon bottles.

*Trademark Reg. U. S. Pat. Off.

Upjohn
KALAMAZOO, MICHIGAN

FINE PHARMACEUTICALS SINCE 1886

ANOTHER WAY TO SAVE LIVES — BUY WAR BONDS FOR VICTORY

Chicago Society of Industrial Medicine and Surgery

1944-45 Officers

CHARLES DRUECK, JR., M.D., Chicago, President.
J. DANIEL WILLEMS, M.D., Chicago, Vice-President.
FRANK P. HAMMOND, M.D., Chicago, Secretary-Treasurer.

Board of Governors

Terms to Expire 1945
THOMAS C. BROWNING, M.D., Chicago.
KARL G. RUNDSTROM, M.D., Chicago.
LEWIS T. BAXTER, M.D., Chicago.
Terms to Expire 1946
CLARENCE W. HENNAN, M.D., Chicago.
DWIGHT I. GEARHART, M.D., Chicago.
H. GLENN GARDINER, M.D., Chicago.
Terms to Expire 1947
JOSEPH H. THOMAS, M.D., Chicago.
ROLAND A. JACOBSON, M.D., Chicago.
O. WALTER REST, M.D., Chicago.

Association of Railway and Industrial Physicians and Surgeons of Kansas City

Officers

EUGENE C. BLACK, M.D., President.
CARL H. BRUST, M.D., Vice-President.
FRED MORLEY, M.D., Secretary-Treasurer. R.R. 4, Kansas City, Kansas.

Directors

MATTHEW W. PICKARD, M.D.
JOHN E. CASTLES, M.D.
F. L. FRIERABEND, M.D.
VINCENT T. WILLIAMS, M.D.
Delegate to A.A.I.P. & S. Convention:
E. P. HELLER, M.D.

Component Society of the American Association of Industrial Physicians and Surgeons.

Western Association of Industrial Physicians and Surgeons

Officers

RUTHERFORD T. JOHNSTONE, M.D., President.
Director, Dept. of Occupational Diseases, Golden State Hospital, Los Angeles.
RICHARD O. SCHOFIELD, M.D., F.A.C.S., Vice-President.
1027 Tenth Street, Sacramento, California.
RODNEY R. BEARD, M.D., M.P.H., Secretary.
Medical Director, Pacific-Alaska Division, Pan-American Airways, San Francisco.
J. M. MCCULLOUGH, M.D., Treasurer.
Plant Physician, Union Oil Company, Oleum Plant, California and Hawaiian Sugar Refining Corp., Ltd., Crockett, California.

Directors

ROBERT T. LEGGE, M.D.
Professor of Hygiene, University of California, Berkeley, California.
WILLIAM P. SHEPARD, M.D.,
Asst. Sec'y and Pacific Coast Welfare Director, Metropolitan Life Ins. Co., 600 Stockton Street, San Francisco, California.
JOHN D. BALL, M.D.,
Spurgeon Building, Santa Ana, California.
BENJAMIN M. FREES, M.D., F.A.C.S., Chief Surgeon, Armour and Company, Firestone Tire and Rubber Company, 947 West 8th Street, Los Angeles.
Chairman Board of Directors
C. A. WALKER, M.D., F.A.C.S., Chief Surgeon, Southern Pacific Co., Pacific Lines, Southern Pacific Hospital, San Francisco, California.
Executive Secretary
ELIZABETH M. CAFFREY, R.N., P.H.N., California and Hawaiian Sugar Refining Corp., Ltd., Crockett, California.

Component Society of the American Association of Industrial Physicians and Surgeons.

GENERAL

THE Literature Studies of Occupational Injuries Attributed to Volatile Solvents—benzol, carbon tetrachloride, trichlorethylene, petroleum solvents, and carbon disulphide—which appeared in INDUSTRIAL MEDICINE, November and December, 1943, and January and February, 1944, are now available in reprint form. Single copies of the booklet will be sent without charge upon application to Safety Research Institute, 420 Lexington Avenue, New York 17.

Institute of Industrial Health

THE Institute of Industrial Health to be established this fall in connection with the Wayne University Medical Center, will be the first school to be devoted to studying industrial and occupational diseases and hazards. There will be four main departments — dermatology, pharmacology, toxicology and nutrition—which cover every phase of the field of industrial preventive medicine. The institute will be under the direction of an expert in public health and preventive medicine, and will offer Detroit area industries the use of laboratory equipment and personnel to solve occupational disease problems. It also will provide trained men and women for persons charged with the health and safety of industrial employees.

—*Detroit Free Press*, July 9, 1944.

Industrial Nursing Section NYSNA

AT THE first conference of the newly organized Industrial Nurses Section of the New York State Nurses Association in Buffalo, June 17 and 18, pre-placement and periodic examinations of all employees were stressed as a primary factor in reducing occupational accidents and illnesses. Industrial nursing in the total program of conservation of the health of the worker was discussed from many angles before an audience of approximately 200 industrial nurses from all parts of the state. Nursing assistance in physical examinations; first aid; awareness of symptoms of occupational and nonoccupational illnesses; cooperation with management in promoting safe and healthful practices; nutrition projects; and understanding of safe plant housekeeping were among the subjects

Milwaukee Association of Industrial Physicians and Traumatic Surgeons

Officers

President
S. H. WETZLER, M.D.
606 W. Wisconsin Ave., Milwaukee
Vice-President
ELSTON L. BELKNAP, M.D.
231 W. Wisconsin Ave., Milwaukee
Secretary-Treasurer
GEORGE H. HOFFMANN, M.D.
7006 W. Greenfield Ave., Milwaukee

Board of Directors

U. E. GERHARD, M.D.
1332 S. 16th Street, Milwaukee
H. G. OAKLAND, M.D.,
1651 N. 12th St., Milwaukee
EDWARD QUICK, M.D.,
411 E. Mason St., Milwaukee
DAVID MEHIGAN, M.D.,
231 W. Wisconsin Ave., Milwaukee

New Jersey Association of Industrial Physicians and Surgeons

Officers

President
E. E. EVANS, M.D.,
E. I. duPont de Nemours, Dye Works Hospital, Deepwater
Vice-President
J. M. CARLISLE, M.D.,
Merck & Co., Rahway
Treasurer
M. E. LOWELL, M.D.,
Western Electric Co., Kearney
Secretary
RUSSELL G. BIRRELL, M.D.,
Standard Oil Co., of New Jersey, Bayway Refinery, Linden

Directors

A. F. MANGELSDORF, M.D., Martinsville
DONALD O. HAMBLIN, M.D.,
American Cyanamid Co., 39 Rockefeller Plaza, New York City
WM. H. MCCALLION, M.D., F.A.C.S.,
General Aniline Co., Elizabeth
EDWARD F. DOUGHERTY, M.D.,
Liberty Tool & Gauge Co., Providence
Colonial Knife Company, Providence

Michigan Association of Industrial Physicians and Surgeons

Officers

CLARENCE D. SELBY, M.D., Detroit
President
LEON SEVEY, M.D., Grand Rapids
President-Elect
DONALD R. BRASIE, M.D., Flint
Vice-President
J.DUANE MILLER, M.D., Grand Rapids
Secretary-Treasurer
A. L. BROOKS, M.D., Detroit
Secretary-Treasurer (alternate)

Board of Directors

HENRY COOK, M.D., Flint
FRANK MCCORMICK, M.D., Detroit
R. H. DENHAM, M.D., Grand Rapids

Component Society of the American Association of Industrial Physicians and Surgeons.

Maryland Association of Industrial Physicians and Surgeons

President
DR. HERBERT C. BLAKE
Medical Arts Building, Baltimore
Vice-President
DR. HAROLD BOHLMAN
Medical Arts Building, Baltimore
Secretary-Treasurer
DR. ROBERT F. CHENOWITH
1127 St. Paul St., Baltimore

Component Society of the American Association of Industrial Physicians and Surgeons.

HEED ALARM IN HYPERTENSION with HEPVISC

Soaring blood pressure levels in hypertension are danger signals effectively met with HEPVISC. Safe, prolonged hypotensive action. Headaches and dizziness relieved.

Dosage: 1-2 tablets t. i. d. Sample and formula on request.

ANGLO-FRENCH LABORATORIES, INC. • 75 VARICK ST., NEW YORK 13, N. Y.

GOOD-BYE "Factory Hands"

HELLO, PETE! HAVEN'T SEEN YOU FOR WEEKS. HOW'S EVERYTHING?
OK! I'VE BEEN WORKING HARD AND FEELING FINE.
WHAT DO YOU MEAN WORKING HARD? THE WAY YOUR HANDS LOOK AND FEEL, YOU'VE BEEN ON A VACATION!
YOU MEAN THAT "KID GLOVE FEEL"? MY HANDS HAVE BEEN IN GOOD SHAPE EVER SINCE I'VE BEEN WASHING UP WITH pH6.

SAFE, SPEEDY CLEAN-UP WITH pH6 HELPS KEEP WORKERS "Hand-happy"

ACCEPTED FOR ADVERTISING IN PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION

Time and again, workers have told us in pleased amazement how pH6 helped them get rid of "Factory Hands" . . . the raw red, defatted skin condition which causes so much discomfort, embarrassment and inefficiency. No wonder workers appreciate pH6 . . . for it also enables them to clean up *fast*. pH6 gently yet speedily removes all common types of industrial grime . . . even grime which stubbornly resists harsh alkaline soaps.

In plant after plant, pH6 is making workers "hand-happy." When pH6 is tried in one department, the good news rapidly spreads throughout the plant. Yes, pH6 contributes substantially to good employee morale. It is an efficient cleanser, and at the same time a *preventive* agent against unhealthy skin conditions.

Yet in actual use pH6, a sulfated oil of dermatological quality, actually costs no more *and often less* than good grades of industrial powdered hand soap. Convenient, economical dispensing methods have been specially developed to fit all types of washroom equipment. Send today for free samples and complete technical data. Clip and mail the coupon!

THE STEPAN CHEMICAL CO.
1353 North Branch St., Chicago 22, Ill.
Gentlemen: Please send samples and circular on pH6. No cost or obligation.

NAME_____ TITLE_____

FIRM_____

ADDRESS_____

CITY_____ STATE_____ IM8

New England Conference of Industrial Physicians

Officers

DR. D. L. LYNCH, Director,
Medical Director, New England Telephone & Telegraph Co.,
245 State Street, Boston.

DR. JOHN F. KENNEY, Assistant Director,
Medical Director, Lorraine Mfg. Co.,
209 Broadway, Pawtucket, R. I.

DR. J. ALLAN THOMPSON, Sec'y-Treasurer,
Asst. Medical Director, New England Telephone & Telegraph Co.,
245 State Street, Boston.

Board of Directors

DR. MARTIN I. HALL,
Medical Director, General Motors Corporation, 269 North Main Street, Bristol, Connecticut.

DR. THOMAS P. KENDRIK,
Plant Physician, Boston Woven Hose and Rubber Company, 29 Hampshire Street, Cambridge, Massachusetts.

DR. J. ROBERTSON KNOWLES,
Medical Director, Boston & Maine R.R.,
North Station Building, Boston.

DR. TIMOTHY F. ROCK
Nashua Manufacturing Company,
77 Main Street, Nashua, New Hampshire.

DR. STANLEY SPRAGUE
J. & P. Coates, Inc.
107 Broadway, Pawtucket, Rhode Island.

Component Society of the American Association of Industrial Physicians and Surgeons.

Rhode Island Society of Industrial Physicians and Surgeons

Officers

President
CHARLES L. FARRELL, M.D.,
Collyer Insulated Wire Company, Pawtucket

Vice-President
RICHARD F. MCCOART, JR., M.D.,
Universal Winding Co., Cranston;
Textile Finishing Co., Providence

Secretary
JAMES P. DEERY, M.D.,
Division of Industrial Hygiene,
State Department of Health,
Providence

Treasurer
ROBERT T. HENRY, M.D.,
Newman Crosby Company, Pawtucket

Board of Directors

THOMAS A. EGAN, M.D.,
New Haven Railroad, Providence

FRANK A. MERLINO, M.D.,
Providence Tuberculosis League,
Division of Industrial Tuberculosis,
Providence

REMINGTON P. CAPWELL, M.D.,
Federal Products Co., Providence
Whittet-Higgins Co., Providence

Section of the New England Conference of Industrial Physicians.

Florida Association of Industrial Surgeons

Officers

KENNETH A. MORRIS, M.D., President
F. A. VOGT, M.D., President-Elect
HERMAN WATSON, M.D., Vice-President
A. M. BIDWELL, M.D., Secretary-Treasurer
First National Bank Bldg.,
Tampa 2, Florida.

Directors

JOHN R. BOLING, M.D. LLOYD J. NETTO, M.D.
FRANK D. GRAY, M.D. J. H. PITTMAN, M.D.

Component Society of the American Association of Industrial Physicians and Surgeons.

Association of Surgeons of the New York Central System

Officers

B. L. COLEY, M.D., F.A.C.S., President
N. W. GILLETTE, M.D., Vice-President
H. M. LONG, M.D., F.A.C.S., Vice-President
G. H. MARCY, M.D., Vice-President
H. A. FATHAUER, Secretary-Treasurer
Office of Secretary-Treasurer,
413 LaSalle Street Stration,
Chicago. Telephone WABash 4200

Executive Council

B. L. COLEY, M.D., F.A.C.S.
Chief Surgeon, New York City
L. A. ENSMINGER, M.D., F.A.C.S.
Chief Surgeon, Indianapolis
H. A. FATHAUER
Secretary-Treasurer
GEORGE P. MYERS, M.D., F.A.C.S.
Medical Director Detroit
F. E. PIERCE, M.D., F.A.C.S.
Chief Surgeon, Chicago
HERBERT M. LONG, M.D., F.A.C.S.
Chief Surgeon, Pittsburgh
OLIVER G. BROWNE
General Claims Attorney

presented. DR. CRIT PHARRIS, assistant medical director, United Aircraft Corporation, Hartford, Connecticut, predicted that industrial nursing will continue to increase after the war because the physical welfare of workers will receive more attention from management, physicians, nurses and workers themselves. He recommended adequate instruction and training in schools of nursing and post-graduate study. Describing revised workmen's compensation laws, DR. HERBERT H. BAUCKUS, president, Medical Society of the State of New York, said that the new legislation placed regulation, inspection, and investigation largely in the hands of county medical societies. The medical profession wishes to reduce the length of disability and

NICOTINE CONTENT
Scientifically Reduced to LESS than 1%

TESTING SANO CIGARETTE SMOKE FOR ITS NICOTINE CONTENT

SANO cigarettes are a safe way and a sure way to reduce your patient's nicotine intake. Sano provide that substantial reduction in nicotine usually necessary to procure definite physiological improvement. With Sano there is no question about the amount of nicotine elimination. With Sano you encounter none of these variable factors involved in methods which merely attempt to extract nicotine from tobacco smoke. With Sano, the nicotine is actually removed from the tobacco itself. Sano guarantees always less than 1% nicotine content. Yet Sano are a delightful and satisfying smoke.

WARNING
Chemical analyses show that pinches of cotton used in cigarette mouth-pieces are entirely ineffective in removing any appreciable amount of nicotine from cigarette smoke.

FREE PROFESSIONAL SAMPLES

For Physicians Only

HEALTH CIGAR CO. INC.
1M—B-44 DEPT. E, 1154 WEST 14TH ST.—NEW YORK, N. Y.
PLEASE SEND ME SAMPLES OF SANO CIGARETTES.
☐ Check here if you also wish samples of pipe tobacco.
NAME _____ M.D.
ADDRESS _____

American Industrial Hygiene Association

Officers 1944-1945

J. J. BLOOMFIELD, President,
National Institute of Health,
Bethesda, Maryland.

R. A. KEHOE, M.D., President-Elect,
Director, Kettering Laboratories
of Applied Physiology,
Cincinnati, Ohio.

E. C. BARNES, Secretary,
Westinghouse Electric & Mfg. Co.,
East Pittsburgh, Pennnsylvania.

J. B. LITTLEFIELD, Treasurer,
American Brake Shoe Company,
2501 Blue Island Avenue, Chicago.

H. H. SCHRENK, 1st Past-President,
U. S. Bureau of Mines,
Pittsburgh.

PHILIP DRINKER, 2nd Past-President,
Harvard School of Public Health
55 Shattuck Street, Boston.

Board of Directors

MANFRED BOWDITCH,
Director, Division of Occupational Hygiene, Massachusetts Department of Labor and Industries,
23 Joy Street, Boston.

J. WILLIAM FEHNEL,
Metropolitan Life Insurance Company,
1 Madison Avenue, New York City.

G. C. HARROLD,
Chrysler Corporation,
341 Massachusetts Avenue, Detroit.

LIEUT.-COL., T. F. HATCH,
A. F. Medical Research Laboratory,
Fort Knox, Kentucky.

E. G. MEITER,
Employers Mutual Liability Insurance Company, 120 Empire Building,
Milwaukee, Wisconsin.

J. H. STERNER, M.D.,
Eastman Kodak Company,
Rochester, New York.

W. R. BRADLEY,
American Cyanamid Company,
30 Rockefeller Plaza, New York.

W. C. L. HEMEON,
Industrial Hygiene Foundation,
4400 Fifth Avenue, Pittsburgh.

W. N. WITHERIDGE,
Detroit Department of Health,
1151 Taylor Avenue, Detroit.

Institute of Traumatic Surgery

Officers

PAUL B. MAGNUSON, President
JAMES J. CALLAHAN, Vice-President
ROLAND A. JACOBSON,
Secretary and Treasurer

Board of Governors

KELLOGG SPEED — ARTHUR H. CONLEY
J. B. WILLEMS — ERIC OLDBERG

American Conference on Industrial Health

Officers

VOLNEY S. CHENEY, M.D., President
EDWARD C. HOLMBLAD, M.D.
First Vice-President
FREDERICK W. SLOBE, M.D.
Second Vice-President
HAROLD A. VONACHEN, M.D., Treasurer
JAMES A. VALENTINE, M.D., Secretary
C. O. SAPPINGTON, M.D., DR. P. H.
Executive Director

TO provide an organization, not for pecuniary profit, in which all agencies and societies, both medical and lay, concerned with the problems of industrial health can hold membership and can meet together in conference for the study, discussion and careful consideration of all industrial health problems and procedure; to engage in scientific research to determine the cause, nature, prevention and cure of diseases and injuries of occupations; to assist in establishing and supervising industrial health clinics to serve small industries; to establish and maintain hospitals which will furnish facilities for the care, treatment and study of occupational injuries and diseases; to make surveys of industrial medical services and recommendations for their improvement; to solicit, receive and administer funds for any purpose that will advance and/or improve industrial health; to establish undergraduate and/or post-graduate courses in industrial medicine and surgery and/or to cooperate with medical schools and industries in maintaining such courses; and to use all those means, which from time to time, may seem wise, for the advancement of industrial health.

THE PROMPT symptomatic relief provided by Pyridium is extremely gratifying to the patient suffering with distressing urinary symptoms such as painful, urgent, and frequent urination, tenesmus, and irritation of the urogenital mucosa.

Gratifying also is the confidence in the physician and his therapy which is so evident in most patients who have experienced the prompt and effective symptomatic relief provided by Pyridium.

By its definite and established analgesic effect on the urogenital mucosa, Pyridium allays pain, and will frequently relax the sphincter mechanism of the bladder, which plays so large a part in the phenomenon of urinary retention.

PYRIDIUM is convenient to administer, and may be used safely throughout the course of cystitis, pyelonephritis, prostatitis, and urethritis. ***The average oral dose is 2 tablets t.i.d.***

More than a decade of service in urogenital infections

PYRIDIUM

(Phenylazo-alpha-alpha-diamino-pyridine mono-hydrochloride)

Pyridium is the United States Registered Trade-Mark of the Product Manufactured by the Pyridium Corporation

MERCK & CO., Inc. *Manufacturing Chemists* **RAHWAY, N. J.**

Regular $175.00 Universal Operating Table

Only $95.00 F.O.B. St. Louis

- Heavy steel pipe, electrically welded, frame
- Steel top measures 20 by 72 inches (78 inches extended)
- Finished in baked-on white Duco enamel

$107.50 F.O.B. Los Angeles

Ideal for dispensary, clinic or first aid room

Thousands of these tables were ordered by the medical department of the U. S. Army at the beginning of the war. Now, due to realignment of purchase schedules, the army has found that a few hundred more tables were ordered than required by the armed services and so, we were given permission by the army procurement officials to offer these extra tables to our regular customers. The savings is yours.

Truly universal, this table is practical for many types of work. Most desirable positions for major and minor surgery, G-U, gynecological, rectal, and ear, nose and throat work are easily obtained.

Made to rigid government specifications, the quality of materials and workmanship in the Universal table is assured. Detailed description will be sent on request.

BP6459½—Universal Table, complete with leg holders, heel stirrups, shoulder supports, anesthetist's screen, cloth panel and leg holder straps.
F.O.B. St. Louis ..... $ 95.00
F.O.B. Los Angeles 107.50
BP6668—Set of Leatherette Covered Cushions 10.00

Sharp & Smith Hospital Division

A. S. ALOE COMPANY

St. Louis, Mo. • Los Angeles, Cal.

decrease the cost of compensation and at the same time provide proper care of the injured worker. Cooperation of the industrial nurse is needed in carrying out the intent of the law. Citing the responsibilities of management in relation to the employment of the pregnant woman, DR. HARRY HEIMANN, Division of Industrial Hygiene, New York State Department of Labor, said that the expectant mother should not be allowed to work on hazardous or strenuous jobs, or to become unnecessarily fatigued. Provision should be made for her to retain seniority rights during absence from her job. MARGARET J. NICHOLS, R.N., industrial nursing consultant, State Department of Labor, spoke of the importance of fair personnel practices in relation to the industrial nurse's work. She suggested that management might well make job analyses of the nurses' duties and pay such employees according to their responsibilities. Industrial nurses, she pointed out, needed vacation with pay, rather than pay in lieu of vacation, and regular hours of work. MRS. ROMA D. PREUSSER, chairman of the section, reviewed the primary objectives of the industrial nurse including: to help maintain the maximum health of the worker; to prevent rapid turnover; and to act as a liaison between management, the worker and the physician. In a paper titled "Successful Industrial Nurses," ELIZABETH ANDREWS, R.N., Ford Instrument Company, New York City, said that among the requirements for a good industrial nurse were thorough education in nursing, and specialized study in public health to include occupational diseases, safety methods, industrial nursing, and allied topics. There was lively discussion on the importance of standing orders, personnel practices in relation to hours on duty, vacations, sick leave, salaries, uniforms, and provision for security in illness and old age.

—In *Health News*, issued by New York State Department of Labor, July 10, 1944.

Management

GOOD employee relations continue to prevail in all operations. There were no strikes or slow downs in any of our affiliated companies during 1943. Absenteeism and labor turnover were at a minimum. In some areas where other mass production industries report absenteeism as high as 18%, absenteeism among employees of affiliates is as low as 2%. There have been no production stoppages and no interruptions or slow downs since long before Pearl Harbor.

—From Standard Oil Company (New Jersey) Annual Report for 1943.

Fitness Plan

DR. W. W. BAUER, director, Bureau of Health Education, A.M.A., in an address (July 25) on the coast-to-coast radio program of Schenley Laboratories, Inc., makers of penicillin, emphasized that "when battlelines extend from the far corners of the earth into the remotest American hamlet where industrial production takes place, the health of the industrial worker takes equal rank with that of the fighting man. Riveter, press operator, machinist, inspector and draftsman, not to mention executive and stenographer, are as vital to victory as machine gunner, bazooka team, ack-ack gunner, or pilot." Accordingly, the AMA, through its Council on Industrial Health, in addition to guiding the organization of industrial health committees in state and county medical societies throughout the country, has devoted special issues of the association's publication to the subject. In furtherance of its purpose of improving health on the production front, the Council also has been instrumental in introducing its study in medical schools and post-graduate courses for physicians. The small factory offers one of the greatest medical and health problems in industry, owing to its inability because of size to provide unaided the necessary safeguards and prompt treatment for on-the-job injuries. To assist in relieving this situation, a comprehensive set of standing orders for industrial nurses working without the immediate supervision of a doctor has been developed by the Council in

How a Free Supply of Sample-Size Benzedrine Inhalers Can Help You Cut Down Absenteeism Caused By Colds

Sample-size Benzedrine Inhalers—shipped and supplied *free of charge and without obligation*—should help reduce the incidence of disabling complications of the common cold, and accelerate the return of mildly affected employees to full working capacity.

Benzedrine Inhaler, N.N.R., is not only extremely convenient to use—especially for workers—but, more important still, its vapor produces a shrinkage *equal to or greater than that of ephedrine.* The sample-size Inhaler delivers the same dosage per inhalation as the sales-size tube, and usually lasts long enough to provide relief during the most distressing stage of a head cold, mild sinusitis or allergic flare-up.

It's easy to secure an ample supply of sample-size Benzedrine Inhalers for your personnel. Just fill in the coupon —or, if you prefer, write on your own letterhead. We will promptly ship you the number you designate—*and you will not be solicited as a result of accepting this offer.* Smith, Kline & French Laboratories, 431 Arch St., Philadelphia 5, Pa.

WRITE, OR MAIL THIS COUPON, FOR YOUR FREE SUPPLY

Smith, Kline & French Laboratories
431 Arch Street, Philadelphia 5, Pa.

Gentlemen:

Please send us, FREE OF CHARGE, the number of sample-size Benzedrine Inhalers designated below. We understand we will NOT be solicited as a result of accepting this offer.

SPECIFY NO. OF INHALERS HERE_____

Order as many Inhalers as you wish. (Past experience indicates that a ratio of one Inhaler for every ten persons employed is usually ample.)

Name_____ (Please print plainly) Title_____

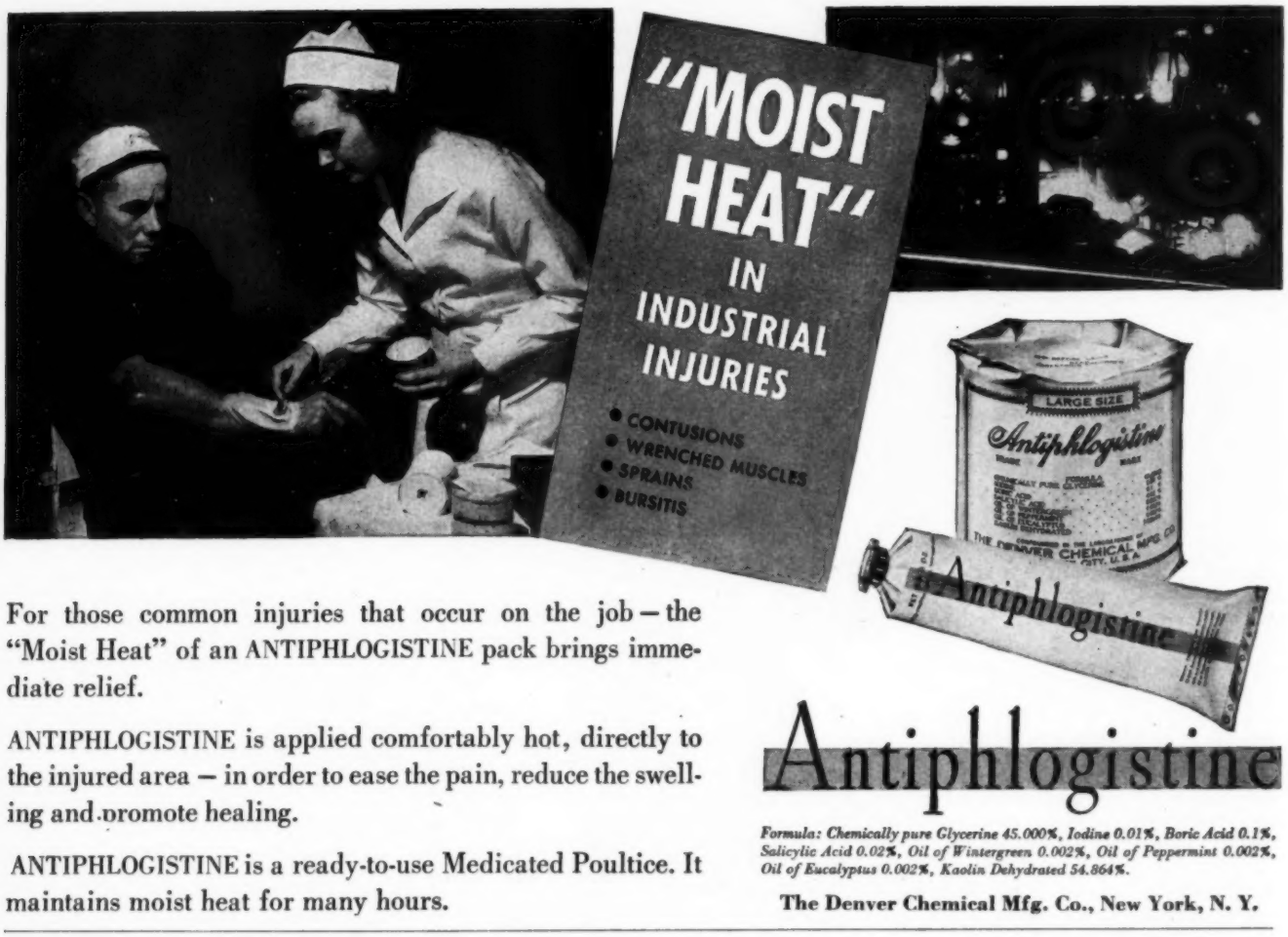
Company_____

Street_____

City_____ Zone_____ State_____

BENZEDRINE INHALER, N.N.R.

Each Benzedrine Inhaler contains racemic amphetamine, S.K.F., 250 mg.; oil of lavender, 75 mg.; and menthol, 12.5 mg.



For those common injuries that occur on the job – the "Moist Heat" of an ANTIPHLOGISTINE pack brings immediate relief.

ANTIPHLOGISTINE is applied comfortably hot, directly to the injured area – in order to ease the pain, reduce the swelling and promote healing.

ANTIPHLOGISTINE is a ready-to-use Medicated Poultice. It maintains moist heat for many hours.

Antiphlogistine

Formula: Chemically pure Glycerine 45.000%, Iodine 0.01%, Boric Acid 0.1%, Salicylic Acid 0.02%, Oil of Wintergreen 0.002%, Oil of Peppermint 0.002%, Oil of Eucalyptus 0.002%, Kaolin Dehydrated 54.864%.

The Denver Chemical Mfg. Co., New York, N. Y.

accord with accepted medical practice. Of equal value as a safety measure has been the publication in pamphlet form of a procedure for industrial physical examinations classifying workers into the following groups: those fit for all work; those acceptable under periodic medical supervision with limited physical exertion, in non-hazardous work, or with special consideration for orthopedic defects, impaired vision or hearing, or psychological handicaps; and those unfit for employment at time of examination.

Failure to Grow Up

ACHIEVING grown-up, mature feelings and attitudes is a difficult job, but an important one from the standpoint of both health and happiness. Many of the people who crowd the doctors' offices are sick, with real aches and pains and disorders of digestion or other functions, because they have not acquired emotional maturity. The goals which describe this kind of maturity are given by Dr. Maurice Levine, of the University of Cincinnati, in a recent book for doctors, *Psychotherapy in Medical Practice*. Here they are: (1) Ability to be guided by reality rather than by fears. (2) Use of long-term values. (3) Grown-up conscience. (4) Independence. (5) Capacity to "love" someone else, but with an enlightened self-interest. (6) A reasonable dependence. (7) A reasonable aggressiveness. (8) Healthy defense mechanisms. (9) Good sexual adjustment with acceptance of own gender. (10) Good work-adjustment. If you are confused about how a person can be both independent and reasonably dependent, the explanation is that one should not be a "clinging vine" woman or the type of man who expects to be babied by his wife, but should be able to stand on one's own feet and make decisions, yet able to take useful advice and to both give and receive love and affection. It is just as babyish to be always giving as to be always demanding. For an example of being guided by reality, Dr. Levine gives the case of a mother whose child in reality interrupts too frequently. The mother who thinks the child's behavior is cute is immature, but so is the mother who sees such behavior as the first step in a criminal career. The grown-up mother neither praises the child nor punishes him severely for the interruption, but tries to understand why he interrupted and to help him understand why he should wait his turn to speak.

—*Science News Letter*, June 26, 1943, quoted in *Minnesota Med.*, July, 1944.

Eyes in Industry

THE NEED for ophthalmologic service in industry is seemingly as great as is the acknowledged need for medical, dental and nursing service," Dr. Ralph C. Williams of the U. S. Public Health Service stated April 26 at the Seminar on Industrial Ophthalmology held in the New York Academy of Medicine under auspices of the National Society for the Prevention of Blindness. "The Industrial Hygiene Division of the USPHS has recognized this requirement in a well-rounded program for industrial hygiene. One of its medical officers, who is a specialist in this field, has been assigned to the NSPB headquarters to assist in the development and conduct of a program in eyesight protection in industry." Discussing the need for personnel especially trained for this work, Dr. Williams said, "The relation of eye lesions to industry is not generally understood nor are the adaptations that may be made to continue the worker in his job. Use of the Snellen chart in the measurement of visual acuity is only one step in the eye examination of an industrial worker. Depth perception, muscle balance, color deficiency, all must be evaluated in determining the worker's ability to do a given job effectively and without injury to himself, to others and to the material with which he works. He must understand not only the evaluation of normal and abnormal vision in industry, but the methods for conservation of eyesight in addition to prevention and treatment of eye traumas. He should be acquainted with industrial environmental

Sustained Relief From Summer Allergies

Acting without appreciable sting or central nervous excitation, Neo-Synephrine provides quick and prolonged relief during this peak season of summer allergies.

Among other benefits, this powerful nasal decongestant is of low toxicity, and its effectiveness is undiminished even on repeated administration.

Neo-Synephrine

HYDROCHLORIDE

LAEVO • α • HYDROXY • β • METHYLAMINO • 3 • HYDROXY • ETHYLBENZENE HYDROCHLORIDE

Available in a ¼% or 1% solution in 1-oz. bottles for dropper or spray; and as a ½% jelly in collapsible tube with applicator.

Trade Mark Neo-Synephrine *Reg. U. S. Pat. Office*

Frederick Stearns & Company

DETROIT 31, MICHIGAN

NEW YORK KANSAS CITY SAN FRANCISCO WINDSOR, ONTARIO SYDNEY, AUSTRALIA AUCKLAND, NEW ZEALAND

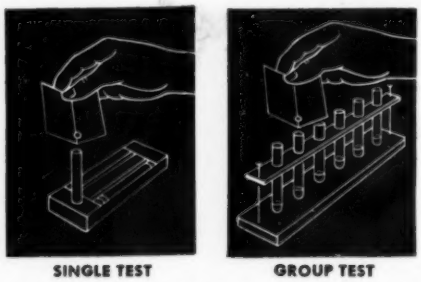
SINGLE or GROUP URINE-SUGAR TESTING *with* CLINITEST

(A Tablet Copper Reduction Method)

Simple and speedy, this refinement and adaptation of Fehling's and Benedict's Copper Reduction methods is conformable to every need—office tests, home visits, patients' use, as well as hospital or clinic group examinations.

ADVANTAGES

No flame needed
No bulky apparatus
No measuring of reagents
No solutions or powders to spill



SINGLE TEST GROUP TEST

Single test made by simply dropping one Clinitest Tablet into test tube containing proper amount of diluted urine. Allow for reaction, compare with color scale.

Available through your prescription pharmacy or medical supply house. Write for full descriptive literature.

DEPT. IM8

AMES COMPANY, INC.
Formerly EFFERVESCENT PRODUCTS, INC.
ELKHART, INDIANA

conditions — illumination, toxic chemicals and gases; he should know something of compensation laws as related to injuries to the eye." Dr. Williams does not think that full-time ophthalmologic service or complete ophthalmologic equipment is required in industry, except possibly in very large plants. Part-time service in conjunction with that offered by physicians and nurses in the plants usually will suffice.

—*Public Health Nursing*, July, 1944.

Voluntary Programs

IT SEEMS clearly indicated that the great past success of non-profit voluntary programs enabling prepayment for health services will be dwarfed only by their future progress. A decade ago fewer than 100,000 people enrolled in these plans during a period of three years. Today Blue Cross plans alone are enrolling more than 100,000 persons every 15 days. The significance of this comparison cannot be ignored. It illustrates a trend which is gathering momentum in striking fashion. Within the near future it is confidently expected that Blue Cross plans, for example, will enroll new subscribers at a rate of 1,000,000 every two months. I believe it is entirely sound to estimate that half of the population of the United States will be enrolled by 1950, and that virtually all of the self-supporting population will be enrolled by 1960.

—From "Voluntary Non-Profit Prepayment for Health Care," by JOHN R. MANNIX, in *J. Tennessee State M. A.*, May, 1944.

"A Number of Them Did"

THOSE of us who have been in industry for a number of years know full well the need for such a program. We know it now especially when the manpower situation is at such a low ebb. The sort of workers that we have today are in great need of rehabilitation and reconditioning. Medicine in industry has practiced prevention or at least has preached prevention and tried to practice it from the beginning. We know that physical fitness makes for greater production, less absence and better health. There have been occasional efforts to develop programs of this character in some industries. Today in most of the larger industries you will find recreational clubs and athletic competitions of various character but little of a specific reconditioning or training for physical fitness. Among executives there have been programs of gymnastics and other physical conditioning processes. I know one industry in which a gymnasium was provided. The supervisors, the executives, were urged and implored to take advantage of it. A number of them did. In the rubber industry I know another instance in which that was done for a number of years, but I have known of no industry in which the program was continuous or which took hold in any large way. In communities where Y. M. C. A.'s, Y. W. C. A.'s and the like offer facilities to industrial workers they are even holding gymnasium classes for the night workers, programs during the day and also programs during the night for some of the shift workers. They have not been great successes, however. There is a lethargy and apathy and indifference to them. It needs some sort of crusading spirit, some sort of new leadership, to develop this idea.

—DR. WILLIAM A. SAWYER, Medical Director, Eastman Kodak, in discussion of "Physical Fitness in Industry," by W. P. JACOBS, LL.D., read before the Section on Preventive and Industrial Medicine and Public Health, A.M.A., June 14, published in *J.A.M.A.*, July 22, 1944.

Why?

IN FOREIGN Letters (*J.A.M.A.*, July 22), from London, the following sentence appears: "With regard to the status of industrial medical practice, the (Trades Union) Council would like to see established a public service that would make the factory doctor independent of the employer." . . . THE following is from a member of the medical department of a large American industry which has numerous different plants, all union, all in war work: "Our examining unit drove up to one of our smaller plants not long ago, and found most of the several hundred employees out on a strike that had been called the day before. Our purpose was the periodic (yearly) physical examination of the workers, which has long been our custom. At the request of the strikers who were then and there picketing the plant, we examined *them* first; and, so far as the others were concerned, we wouldn't have known there was any trouble—*everyone* came in to be gone over."

NOW—the *Color* SIGNALS THEIR PROTECTION!

AN EXCLUSIVE FILTER DEVELOPMENT—BY M·S·A

M·S·A COLORED FILTERS

FOR M·S·A COMFO AND DUSTFOE RESPIRATORS

Designed for service with modern, all-plastic M.S.A. Dust Respirators, these new Colored Filters bring a unique advantage in use: you can *see at a glance* the filter-type employed, without removal from the respirator. *Color* shows through the transparent Dustfoe and open Comfo filter containers. The filter-type is constantly in view for worker, foreman and safety inspector—helping to assure correct filter-use for each type of job. Workers quickly associate color of filter with its dust and fume protective classification; storekeepers issue the correct filter to each worker by color—quickly, easily and without error. Check the details below . . . send your order for *proof on the job* of this latest M.S.A. aid to better safety!

RED

Light Red is the color-key to M.S.A.'s approved protection against ALL DUSTS (including toxic dusts: lead, cadmium, manganese, etc.) Dustfoe Filters, BM-2148—Comfo Filters, BM-2133. (Both approved by U. S. Bureau of Mines.)

GREEN

Light Green indicates M.S.A.'s approved protection against pneumoconiosis-producing dusts (silica, asbestos) and mists. Dustfoe Filters, BM-2147; Comfo Filters, BM-2130. (Both approved by U. S. Bureau of Mines.)

GREY

Grey is the color of the Comfo Metal Fume Respirator Filter, used only in the Comfo, and approved by the U. S. Bureau of Mines for protection against toxic fumes from molten metals. BM-2139.

THE *Dustfoe* RESPIRATOR

THE *Comfo* RESPIRATOR

MINE SAFETY APPLIANCES COMPANY

BRADDOCK, THOMAS AND MEADE STREETS · PITTSBURGH, PA.

District Representatives in Principal Cities

COMBATING
Gastro-intestinal dysfunction in
ARTHRITIS

Recognizing that the severity of joint manifestations in arthritis tends to parallel functional deviations, chiefly in the colon, liver and gallbladder, OCCY-CRYSTINE is widely employed in treating the arthritic because in so many cases it effectively promotes:

1. PROMPT relief of colonic stasis;
2. MARKED improvement of liver and gall bladder function;
3. STIMULATION of renal clearance of toxins; and
4. RELEASE of colloidal sulfur, so frequently deficient in the arthritic economy.

Occy-Crystine—rational, economical, and highly effective — is the preferred "saline detoxicant-eliminant" in the treatment of arthritis.

Write for free trial supply and full data.

OCCY-CRYSTINE
the sulphur-bearing saline detoxicant-eliminant

FORMULA: Occy-Crystine is a hypertonic solution of pH 8.4, with sodium thiosulfate and magnesium sulfate as active ingredients, to which the sulfates of potassium and calcium are added in small amounts, contributing to the maintenance of solubility.

OCCY-CRYSTINE LABORATORY, SALISBURY, CONN.

THE MIND OF THE INJURED MAN
A Study of Trauma and the Nervous System, with Particular Reference to Neuroses Associated with Injury
by Joseph L. Fetterman, M.A., M.D., Assistant Clinical Professor of Nervous Diseases, Western Reserve University School of Medicine, Cleveland, Ohio

"The reading of this manuscript has been an interesting and informing experience, which I hope will be shared by many. This is not just a book, it's a very good book!" —Foster Kennedy. Cloth, 6x9, 270 pages, 28 illustrations, bibliography, index. Price $4.00.

Pruritus Ani
By Charles J. Drueck, M.D., F.A.C.S.
238 pages; 30 illustrations

Sixty per cent of the adult population is said to be afflicted with pruritus perinei and yet the bedside physician does not know how to handle it. This important book is the first comprehensive monograph on this complex and distressing affliction. Published in 1938 at $5.00—Now..$3.00

INDUSTRIAL MEDICINE BOOK COMPANY
605 N. Michigan Ave., Chicago, Illinois

COMMENT and OPINION

INDUSTRIAL medicine and hygiene do not need to be "Sold" by sociologists and humanitarians.

—ROLAND R. CROSS, M.D., Director, Illinois Department of Public Health.

METHYL bromide is a toxic substance, and nervous system or other complications may arise from exposure to it. Recent allocation of methyl bromide by the War Production Board for use in the armed forces merits extreme care in its disposition and utilization. While it can be handled without injury if used intelligently, its toxic potentialities must be borne in mind, and its indiscriminate and careless use must be avoided.

—From "Methyl Bromide Poisoning," by RUSSELL N. DE JONG, M.D., in *J.A.M.A.*, July 8, 1944.

Medical Service

NO ONE can say what will be the pattern of medical practice 25 or 50 years hence. The present system may be wholly right, partially right, or wholly wrong, but nevertheless it exists. Rightly or wrongly, the great majority of physicians are averse to becoming salaried employees and they insist that their compensation shall be in the form of fees for the services they render. Health insurance is in motion and behind it there is a dynamic power that has its source in the increasing public demand for relief from the economic hazard of sickness. There are those who, living in their own little world of absolutes, regard the word "change" as a synonym for "calamity." There are others who see in the demand the possibilities of a quick and complete solution of all our problems of health. But those who have been engaged in translating the public demand into the minute details of organization, administration, and costs for millions of people, have approached the problem with the healthy apprehension and respect which it deserves. The success of their efforts depends very largely upon the support they receive from their associates in the medical profession.

—From "The Development of Medical Service Plans," in *Pennsylvania Med. J.*, June, 1944.

Industrial Medicine

A POSTWAR development which will greatly affect industrial relations is low cost medical care for men and women in industrial plants. This was underscored at the convention of the American Medical Association in Chicago by the retiring president, Dr. James E. Paullin. He called attention to the fact that industry after the war would need no less than 8,000 additional doctors. The supply of doctors handling the medical needs of industrial plants, he said, has been dangerously depleted. Thousands of young doctors would have to be trained for industrial service. This interest of the AMA in industrial medicine is interesting. Heretofore, the association has viewed with alarm and some misgivings the "encroachment" of industrial medicine upon the private practice of its members. But the realization is growing among the profession that the cost of medical care must be brought down, if the socialization of medicine is to be avoided. Some of the leaders, at least, believe AMA's traditional policy has been shortsighted. Henry Kaiser's experiments in providing low-cost medical care proved what can be done, and there are many who predict that after the war every large plant will provide a far more extensive medical service for workers than has thus far been the practice. Low cost medical care is something which employers might well include in their list of postwar "musts." It is here to stay.

—Editorial in *Industrial Relations*, July, 1944.

Selection of the Physician

WITHOUT doubt, the employer or insurer is better qualified to select physicians to treat industrial cases because, fortunately, in spite of our large toll of industrial accidents, serious, complicated cases are relatively infrequent and therefore individual employees have only rarely experienced the need of employing skilled physicians or surgeons. However, this right of selecting the physician, while granted to employers and their insurers when compensation laws were first enacted, has been subject to some criticism from labor because it fails to recognize the age-old privilege of selecting one's own physician. The answer to this criticism is not to grant employees the unrestricted right of free selection. Where such a program has been tried, the result has been anything but satisfactory. Not only have medical costs gone up sharply, but compensation benefits have increased as well. This latter result has been caused partly by protracted disability periods, but more importantly by increased payments for permanent injuries, which fact implies a lower standard of skill in treatment. The logical solution is somewhere between these extremes. No one will deny that supervision of medical care should rest solely in the hands of the doctors or that confidence in the physician plays a great part in the prompt and complete recovery of the patient, and offsets in some measure a lesser degree of competence. Therefore, employees should be permitted to select the physicians who shall treat them from a panel of doctors whose competence should be certified by state medical societies. Un-

der such a program, the panel physician must agree to make reports promptly, accept consultation when requested, and agree to arbitrate disputes. Such a plan has been in operation in Wisconsin for many years and is endorsed by administrators, employers, labor, and organized medicine.

—From "The Physician's Responsibility in Compensation Law Administration," by B. E. KUECHLE, in *Rocky Mountain Med. J.*, June, 1944.

The Price of Self Respect

THE following statement is an excerpt from a letter received by Dr. R. W. Billington, of Nashville, Tennessee, from a friend in England with whom he was associated as a medical officer in World War I. It is best that the statement be published without comment: "I've never been enamored of the National Health Insurance we have over here. I don't think anyone outside the approved societies and the Ministry of Health ever has been. The approved societies make fat profits out of it and the Ministry gets plenty of jobs for the idle and incompetent. I've experienced so much consistent injustice from its administrators that this year I've chucked my share in it overboard—told them what I thought of them as 'administrators' and then sent in my resignation. The 'telling off' was my best effort and I don't think it was so very poor. I'll bet there's not one of them would dare tell his wife how I described them and there wasn't a swearword in the whole thing. I don't know when I've enjoyed an afternoon so much. Since I resigned they've eaten dirt repeatedly, and asked me to take it back and continue, thus proving everything I told them about themselves to be true. They admit I've never had a square deal from them! In writing, too! But there's nothing doing. It will cut my income down very much indeed, but I'd starve rather than forfeit my principles and lose my self-respect. And they have to do this in wartime, when, in the slack season, I am working 18 to 20 hours a day without respite on Sundays and without holidays. I can get on with my patients and human beings generally, but I abhor these low forms of life, 'committee men.'"

—Editorial, *J. Tennessee S.M.A.*, April, 1944, reprinted in *Delaware S.M.J.*, May, 1944.

Nitroglycerin

MOST cases of nitroglycerin poisoning are accidental and occur in the manufacture of explosives. Most of the fatal cases have been caused by overdosage of the drug used as a cardiac sedative. Its use to produce disorderly action of the heart for the purpose of malingering to avoid military service is old. The minimum lethal dose is estimated at 2 minims of the pure product. Practically all of the immediate signs and symptoms of poisoning are due to reduction of blood pres-

"whew! imagine the dish-washing in a war-plant without DIXIE CUPS"

When large scale dish-washing is done hurriedly, health standards collapse. Inexperienced help, working under pressure in plant kitchens, is likely to cause the spread of contagion and its dread result—absenteeism.

Dixie Cups are used but once and thrown away. They can never be contaminated by sloppy dish-washing or lack of proper sterilization. Nor can they pass along infection resulting from contact with anything touched by the lips of others. Instead, they reach each user—in cafeterias and at water coolers—fresh, crisp, clean—and *safely disposable.*

● **War Needs Come First**

Right now we can fill only high priority orders and frequently not all of those, owing to the demands of our armed forces and war plants. We sincerely regret any delays this may cause—and are doing our very best to catch up!

Dixie and Vortex Cups are made at Easton, Pa., Chicago, Ill., Darlington, S. C., and Toronto, Canada.

DIXIE CUPS

DRINKING CUPS AND FOOD CONTAINERS

CEVASAL*

IMPROVED SALT MEDICATION for Heat Sickness

Contains

Sodium Chloride	replaces salt lost in perspiration and excessive urination induced by drinking large quantities of liquids
Dextrose	replaces the energy used up in work
Vitamin C	Improves appetite; combats infection and bacteria toxins; lack of this vitamin causes weariness, headaches, restlessness, impaired digestion.

Cevasal is sold in bottles of 100, 1000, or 25,000 tablets. Attractive single tablet dispensers are available; fixed to walls or posts near the water founts, these dispensers encourage and facilitate use of the tablets by the employes. Prices on request.

*Used by USSR Merchant Marine

INDUSTRIAL DRUG SUPPLIES INC

106 GREENWICH ST. NEW YORK 6, N. Y.

sure, and may appear within a few minutes to an hour or more after exposure to nitroglycerin. The most common symptom is headache, though it may be absent when other signs are present. Complete blindness of one or both eyes may precede the headache, but is only temporary; when the headache starts, the vision clears. In severe cases, the intense throbbing of the head is accompanied by palpitation of the heart and visible carotid pulsations, and there may be pulsations all over the body, even to the tips of the fingers; the face is flushed, vomiting may occur, also colicky pains and diarrhea. Sweating, dry throat, polyuria and bronchitis are other signs. In very severe cases, the signs are not due entirely to lowering of the blood pressure; the heart muscle is affected directly and the heart beats are weakened. There may be delirium and convulsions or sudden collapse. The respiratory center is excited as in anoxemia. The breathing at first is quickened and deepened, eventually the respirations become slower and shallower, cyanosis deepens, and death finally occurs owing to paralysis of the respiratory center. No satisfactory treatment for nitroglycerin poisoning has been devised. Bromides have no beneficial effect and irritate the stomach. Coal tar derivatives and all depressant remedies should be avoided. Strong coffee is helpful and, in severe cases, caffeine sodium benzoate (7½ gr.) may be given intravenously. Ergot and adrenalin are worth trying, and belladonna has been found to be of benefit. In case of poisoning from ingestion, the stomach should be washed out thoroughly, and diuresis should be induced by intravenous injection of glucose solutions. Caffeine sodium benzoate should be administered intravenously at two or three hour intervals. Cathartics should be given to aid in elimination of the poison.

—From abstr. in *Modern Medicine*, June, 1944, of "Acute Nitroglycerin Poisoning," by I. M. RABINOWITCH, in *Canad. M. A. J.*, 50:199-202, 1944.

Garfield Reports

MEDICAL care for the sick is becoming a diminishing economy," says Dr. Sidney R. Garfield, director of the Kaiser-sponsored Permanente Foundation Hospital, Oakland, California, in his first annual report on that institution. Henceforth, he declares, group practice should "place the accent on the prevention of illness. How much wiser to transfer the economy of medicine to payment for keeping the patient well! Such becomes the case with prepaid group medicine operating in efficient facilities. The fewer the sick the more the remuneration; the less serious the illness the better off the patient and the doctor." Today, says Dr. Garfield, trained young men "spend the best years of their lives waiting to be discovered," and meanwhile "are disillusioned and often forced to step beyond their fields and ability because of financial reasons." But such a man entering a group "could immediately be used to his full capacity," because the group "sponsors the young man." Would physicians support a plan "which permits doctors a good income, which provides full care so economically even under wartime duress, which is independent and pays off the cost of facilities, which does not need endowment or charity to support it, which can provide its own research and training, and which does all these more effectively if the patients are kept well?" Dr. Garfield asks. "I am sure they would. It could be done painlessly and harmlessly in the following way. For example, give the doctor three choices: (1) Private practice; (2) Part-time private practice, part-time group medicine; (3) Full-time group medicine. Health centers should then be constructed at various strategic areas throughout the state. A board of physicians of university caliber would arrange those working full-time group medicine into ideal groups—or as nearly ideal as possible—and staff the centers with them. Naturally, the older men with large practices would remain in private practice. The younger men would desire full-time group medicine. The in-between age would be

NOW 3 IMPORTANT ADDITIONS

M·S·A FEND

GROUP OF PROTECTIVE CREAMS AND LOTIONS

FEND-U A semi-water repelling lotion, forming a barrier on the worker's skin against all types of cutting oils and cooling compounds, kerosene, carbon tetrachloride, tetrachlorethylene, benzol, other solvents and degreasers, mild acid and mild alkaline solutions, alcohols, acetates.

FEND-F A water-soluble, heavy duty lotion, helps guard against dermatosis from aluminum, magnesium and zinc dusts; forms an effective barrier against Fiberglas, sharp particles, fruit and vegetable fuzz, chlorinated solvents.

FEND-PC Helps reduce nervous perspiration where this is the cause of skin irritation—thus helping to prevent rusting of polished metal surfaces through contact with skin moisture. It is a water-soluble cream, which protects the skin against dust-borne irritants, grime, grease, dirt.

These new FEND products join the following established group of Fend Creams and Lotions, in wide use throughout industry, assisting in protection against industrial dermatitis:

FEND-A Water Soluble; protects against dusts, paint, lacquer, and other adhering or staining compounds.

FEND-E Water soluble; protects against irritants with low water content; cutting oils, petroleum distillates, chlorinated solvents, degreasers, etc.

FEND-I Water-repelling; protects against dilute acids, and alkalies, formaldehyde, metallic salts, etc.

FEND-L Water soluble; protects against ultra-violet and infra-red rays in welding flashes, sunlight, etc.

FEND-O Protective lotion, for handling explosives, coal tar derivatives, halowax, creosote, etc.

FEND-X For application after the work period. An industrial skin conditioning cream; serving as an emollient and added protection for the worker.

FEND Creams and Lotions form a protective physical barrier on the skin against scores of irritants encountered in industry . . . are simply rubbed onto the exposed skin before work, and easily removed with mild soap and warm water at work's end. Write for descriptive literature, including detailed application chart.

MINE SAFETY APPLIANCES COMPANY

BRADDOCK, THOMAS AND MEADE STS. · PITTSBURGH, PA.

District Representatives in Principal Cities

Starting from Scratch

Itching, painful dermatologic lesions and hemorrhoids respond symptomatically to application of

NUZINE OINTMENT

The soothing, cooling effect of Nuzine brings welcome relief promptly, and decreases inflammation and congestion.

Nuzine is supplied in 1 oz. tubes with special hard rubber applicator, anatomically correct in design; easily removed label. Also 1 lb. jars.

NUMOTIZINE, INC.

900 NORTH FRANKLIN STREET • CHICAGO, ILLINOIS

part-time and thus back up the younger doctors. Men returning from the Army would probably be inclined to join groups. Thus as years go by there would be a natural progression of young men to full-time group practice as they grow older; part-time group medicine and probably full-time private practice would gradually diminish or disappear. Medical care plans run by an over-all medical group would insure the majority of people in the state. Doctors in city or country would get equalized income and equalized facilities. Sabbatical years and vacations would be possible, as also would be freedom being tied to a telephone. Under such a plan quackery and cults in medicine would tend to be eliminated. Competition would exist between groups for reputation, which would be healthier than competition between individuals. Health centers and hospitals would be self-supporting and research could be self-supporting. Free choice would be the free choice of a group. There is no problem in medicine that such an arrangement could not answer."

—*Medical Economics*, June, 1944.

At Last!

FEDERAL, state, county, municipal and local goverments are restricted in their use of paper to the same extent as private printers and publishers, effective as of July 1, the War Production Board announced today. All departments and agencies of the United States government will be controlled by a conservation order issued by the Bureau of the Budget. A new limitation order issued by WPB cuts the paper usage of all other governmental units using more than a ton of paper a year or purchasing more than $1,000 worth of printing a year. The planned effect of the WPB action is to reduce the consumption of paper by governmental units to 75% of the amount used in the year ended June 30, 1942.

—*Chicago Herald-Examiner*, July 1.

No Stomach

THE Wagner bill "hasn't a stepchild's chance of being passed," said Fulton Lewis Jr. in a column syndicated recently by King Features. "Neither Senator Wagner nor Senator Murray commands sufficient influence in the present Congress to be a competent enemy of medical science or anything else," Mr. Lewis asserted. "The present Congress has no stomach for such stuff." Nevertheless, the commentator discerned "powerful realities which eventually are certain to explode. The American Medical Association," he said, "with its cloistered leadership which talks mostly to itself, doesn't seem to have the slightest understanding of the situation. Its only answer is to rant against the dangers and to try to make the realities non-existent by the mere denial that they exist."

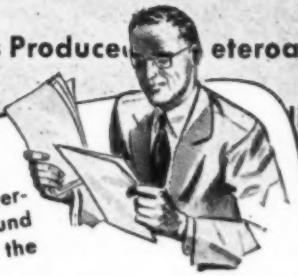
—*Medical Economics*, May, 1944.

Be Normal

TEN POINTS to remember in helping patients deformed or crippled by war injuries to regain emotional stability and "focus attention on what is left instead of on what is lost" are listed by Maj. Walter E. Barton in "Healthy Attitude Toward War Injuries" in the February *Public Health Nursing* magazine as follows: (1) Preserve an attitude of normality. The disabled person should be treated as though there is nothing intrinsically different about him as a result of his handicap. (2) Be natural. A natural manner that one would bring to a normal person is all that is necessary. (3) Face the reality of the disability. Create within the patient a willingness to face the fact of his limitation. (4) Ignore the deformity. Let no horror or sorrow appear in the face or manner of the person in contact with the deformity. (5) Reassure the handicapped. Help the soldier concentrate on the determination to get well and on the determination to overcome the loss. Restore his faith in his ability. The martyr's attitude may be noble, but it doesn't bring much happiness to the individual. (7) Continue social living. Encourage the patient to resume social contacts after he returns to his own home. (8) Give the patient a job to do. Work is associated in our minds with health. (9) Keep a balance in life. In order to maintain mental health, some work, some play, some rest should be a part of every day. (10) Stress the importance of beauty of spirit. The handicapped person who has overcome his disability carries a great message to those who feel overburdened by life's many tribulations.

—*Pennsylvania Med. J.*, July, 1944

Cook, Hart and Joly: "Effect of Respiratory Stimulating Factors on Endogenous Respiration of Yeast." *Proc. Soc. Exptl. Biol. Med. 38:169, 1938* • Loofbourow and Dwyer: "Intercellular Wound Hormones Produce[d] [by] eteroauxin." *Science 88:191, 1938* • Cook, Loofbourow and Sti[ll] [on] lies of Prolifer-ation-promoti[ng] Congr. intern. [Physiol.] e Production [of] Irradiation [on] and Cook: "S[ome] [Ef]fects of Yeas[t] [Gr]owth," *Proc.* [Soc. Exptl. Biol. Med. 43:949, 194]1. [Pop]ulation." Souf[rin] Tissue Repair. [Ch]emical Far-don: "T[he] [Ef]fects of [Ir]radiation [on] *Obst. 75:220,* [1942] • Liberated [Ox]ygen [Ex]changes *1939* • Gi[ant] [Cr]ystals by the Ultra-v[iolet] [Mi]croscope." Hart: "Biol[ogical] [Ef]fects of [Ir]radiation [on] *Thom* 1:65 [1942] • Inter[ference] [Ph]enomena [in] Factors [Af]fecting Cells." [1942] • Kreke Ei[chel]: "[Ca]n Overcome Depressant Effects of Germicide [on] [Tissue] Respiration." *Proc. Soc. Exptl. Biol. Med. 50:210, 1942*



FIFTY-NINE SCIENTIFIC PAPERS published in American and foreign journals furnish the background for the biodyne concept which is the basis of the

NEW BIODYNE BURN THERAPY

Combines new discoveries in tissue metabolism (Biodynes), with two local aids (Petrolatum and Compression Bandages), resulting in faster healing; relief of pain; decreased formation of scars and keloids.

BIODYNES are natural cellular products which help regulate cellular proliferation and metabolism and which offset the depressing effect of germicides on tissue respiration.

PETROLATUM BASE of Bio-Dyne Ointment maintains soft coagulum and minimizes crusting under which infections might develop.

COMPRESSION BANDAGES limit edema within the lesion and deeper substructures; maintain Bio-Dyne Ointment in contact with the lesion; markedly decrease water loss from the burned area.

Physicians who have had extensive experience with the new Biodyne Burn Therapy reported no contra-indications to the use of Bio-Dyne Ointment in any burn lesion.

BIO-DYNE
OINTMENT
Manufactured by Sperti, Inc.
Cincinnati, Ohio

Bio-Dyne Ointment is available from leading surgical supply houses in 15-oz. jars at $5.50; 5-lb. jars at $21.50.

THE ONLY PETROLATUM OINTMENT CONTAINING BIODYNES

STATE HEALTH DEPARTMENT ACTIVITIES

Alabama

THERE are two active industrial nursing associations in the State of Alabama. The oldest is the Chattahoochee Nurses' Industrial Club, which has 18 members. Several of the members reside in Georgia and are employed by Columbus, Georgia, manufacturing establishments. Most of them, however, live in Alabama. The Club has monthly meetings, in which they discuss the various problems which they face in their individual industries. On several occasions the organization has invited the executives of the firms for whom they work, the medical directors of the companies, and various members of the State Industrial Hygiene Division for round table discussions of such pertinent problems as initial and periodic physical examinations in industry; correlation of the medical and safety departments, etc. Four members of this nurses group attended the A.A.I.N. in St. Louis, in May. MISS JANE MEHLE, of the West Point Manufacturing Company, Shawmut, Alabama, is the President of the group; MISS VADA HANNA, of the Swift Manufacturing Company, Columbus, Georgia is Vice-President; and MISS AUGUSTA WOOD, of the Lanett Mill, Lanett, Alabama, is the Secretary. More recently organized is the Industrial Nurses' Section of District No. 1 Alabama State Nurses' Association, which centers its activities in Birmingham. MRS. ISLA HILDERBRAND, of the Southern Bell Telephone & Telegraph Company, is President; MISS EUNICE POWELL, of the American Cast Iron Pipe Company, is the Secretary; and MISS LYDIA MCKEE, of the Birmingham Visiting Nurses Association and the Jefferson County Health Department, is the Program Chairman. This group has had six monthly meetings since their organization in December. Besides the routine business of organizing the group, the Club has invited in several speakers to discuss various phases of industrial health, including—engineering, nursing, medical, and safety activities.

Illinois

THE Division of Industrial Hygiene of the Illinois State Department Public Health is an official fact-finding, advisory agency of the state government, established to assist industry and labor, and all those directly involved in studying and controlling the problems of industrial hygiene and sanitation. The following services of the Division are offered at no cost: FIELD SERVICES—Medical, engineering and chemical personnel of the Division are available upon request for the following services: (1) *Medical:* evaluation of environmental exposures; diagnosis aid to medical profession; maintenance of an occupational disease clinic for case study; formulating industrial medical programs. (2) *Dental:* dental surveys in plants to evaluate oral manifestations of occupational origin; assisting in the formulation and promotion of industrial dental programs; recommendations for improving industrial dental services. (3) *Nursing:* assistance in setting up nursing and first-aid programs; clearing house for industrial nursing information. (4) *Engineering:* plant surveys and studies of industrial processes and operations; collection of industrial atmospheric contaminants; recommendations for methods of control; information and designs on industrial exhaust systems. (5) *Chemical:* complete laboratory facilities for analyses of materials and air samples; research in methods of collection and determination of atmospheric contaminants. REGULAR PUBLICATIONS—The State Department of Public Health issues regularly the news bulletin entitled *What's New in Industrial Hygiene.* This bulletin is mailed free of charge to any interested individual or agency by writing to the Division of Industrial Hygiene, 1800 West Fillmore Street, Chicago. INFORMATION SERVICE—The Division of Industrial Hygiene acts as a clearing house for information on industrial hygiene. The Division maintains an extensive library on all phases of this subject. This information on any subject can be secured by an inquiry addressed to the Division. Publications on subjects of special interest are available. Copies may be secured free upon request. LECTURE SERVICE—Upon request, the Division of Industrial Hygiene will provide speakers

Rx DESITIN OINTMENT
The External Cod-Liver Oil Therapy

USED EFFECTIVELY IN THE TREATMENT OF
Wounds, Burns, Ulcers, especially of the Leg, Intertrigo, Eczema, Tropical Ulcer, also in the Care of Infants

Desitin Ointment contains Cod-Liver Oil, Zinc Oxide, Petrolatum, Lanum and Talcum. The Cod-Liver Oil, subjected to a special treatment which produces *stabilization* of the Vitamins A and D and of the unsaturated fatty acids, forms the active constituent of the Desitin Preparations. The first among cod-liver oil products to possess unlimited keeping qualities, Desitin, in its various combinations, has rapidly gained prominence in all parts of the globe.

Desitin Ointment is absolutely non-irritant; it acts as an antiphlogistic, allays pain and itching; it stimulates granulation, favors epithelialisation and smooth cicatrisation. Under a Desitin dressing, necrotic tissue is quickly cast off; the dressing does not adhere to the wound and may therefore be changed without causing pain and without interfering with granulations already formed; it is not liquefied by the heat of the body nor in any way decomposed by wound secretions, urine, exudation or excrements.

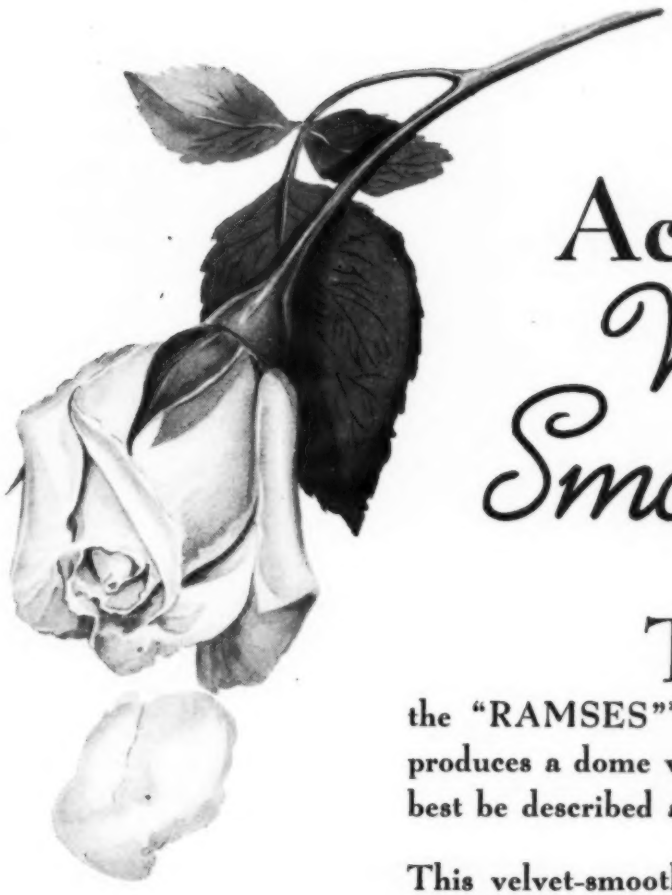
DESITIN POWDER

Indications: Minor Burns, Exanthema, Dermatitis, Care of Infants, Care of the Feet, Massage and Sport purposes.

Desitin Powder is saturated with cod-liver oil and does not therefore deprive the skin of its natural fat as dusting powders commonly do. Desitin Powder contains Cod-Liver Oil, (with the maximum amounts of Vitamins and unsaturated fatty acids) Zinc Oxide and Talcum.

Professional literature and samples for Physicians' trial will be gladly sent upon request.

Sole Manufacturer and Distributor in U. S. A.
DESITIN CHEMICAL COMPANY
70 SHIP STREET PROVIDENCE, RHODE ISLAND



Accent on *Velvet Smoothness*

The process used in manufacturing the "RAMSES"* Flexible Cushioned Diaphragm produces a dome which is soft and pliable and can best be described as being as smooth as velvet.

This velvet-smoothness lessens the possibility of irritation during use.

The "RAMSES" Flexible Cushioned Diaphragm is manufactured in sizes of 50 to 95 millimeters in gradations of 5 millimeters. It is available on the order or prescription of the physician through any recognized pharmacy.

ACCEPTED AMERICAN MEDICAL ASSN. Council on Pharmacy and Chemistry

Ramses
TRADE MARK REG. U.S. PAT. OFF.

FLEXIBLE CUSHIONED
DIAPHRAGM

*The word "RAMSES" is the registered trademark of Julius Schmid, Inc.

Gynecological Division

JULIUS SCHMID, INC.

Established 1883

423 West 55th Street New York 19, N. Y.

A MARK OF Ramses DEPENDABILITY

PROMOTES GRANULATION
LESSENS DANGER OF INFECTION
ENCOURAGES QUICK HEALING

in burns, sunburn, open wounds, ulcers and various skin conditions.

GADOMENT
(PATCH)

The Original American Cod Liver Oil Ointment

•

Write now for your copy of the booklet "Industrial Skin Hazards."

THE E. L. PATCH COMPANY
BOSTON, MASS.

SULFAREA: SKIN INFECTIONS
OINTMENT
SCLOREA: WOUNDS BURNS
EMULSOID

BOTH PRODUCTS CONTAIN
SULFANILAMIDE
SULFATHIAZOLE
UREA

INFECTION PROPHYLAXIS

IN Sulfarea and Sclorea the clinician obtains two highly efficient methods of applying the sulfonamides.

Sulfarea, the ointment, is a ready-prepared surgical dressing for superficial lesions, infected burns, certain pyogenic skin infections, traumatic wounds, leg ulcers and the like.

Sclorea, the emulsoid, has the same indications with the exception of cutaneous infections, in which Sulfarea is more practical. However, as Sclorea also contains cod liver oil it may obtain quicker healing of burns, denudations and abrasions. Write for professional brochure, Dept. 4.

THE DRUG PRODUCTS CO., INC.
LONG ISLAND CITY, N. Y.

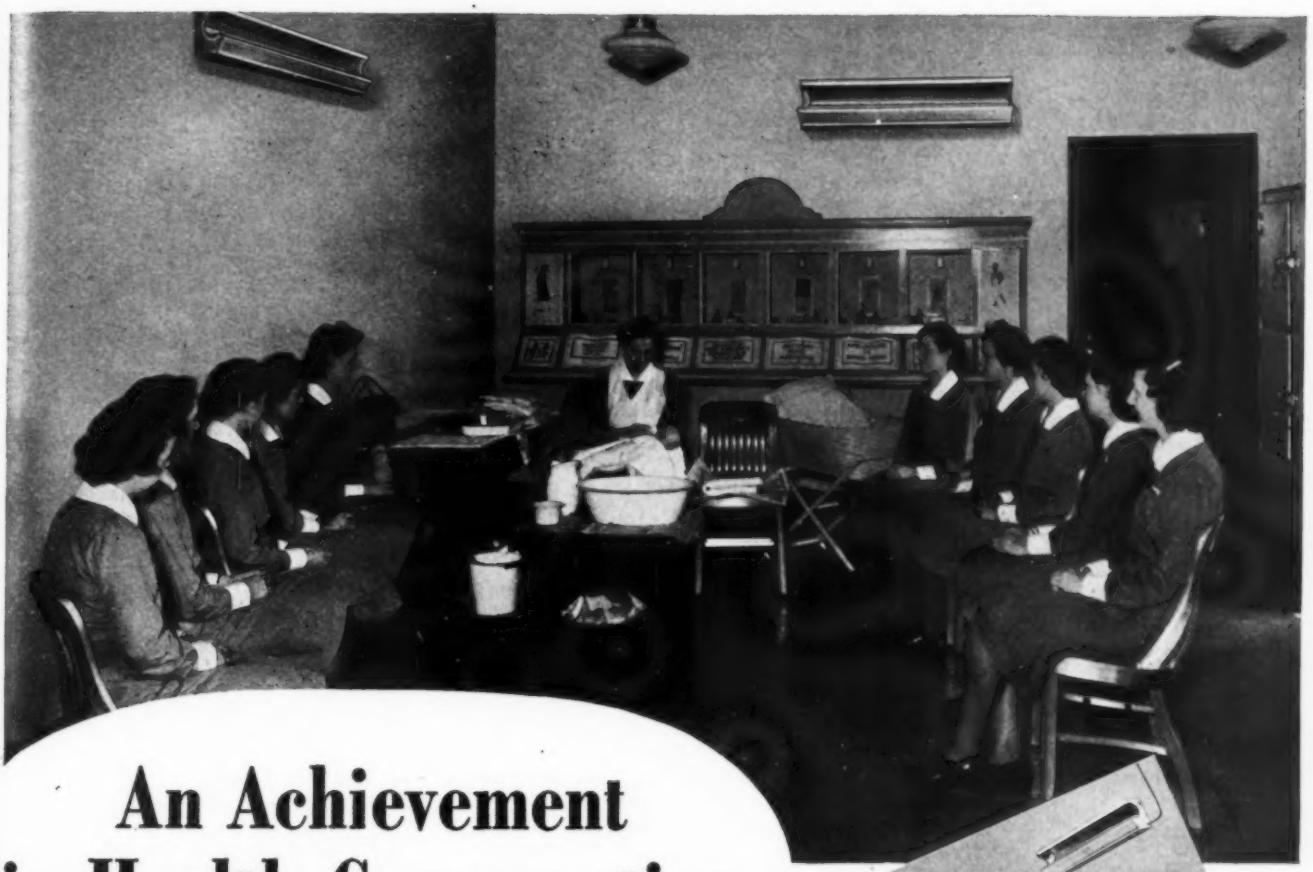
who are competent to lecture on the various subjects in the field of industrial hygiene. These speakers are provided at no cost to organized groups by writing the Director of the Department.

Mississippi

EVERY physician having knowledge of any disease that arises out of, and in the course of, employment shall report the same to the county health officer in accordance with the laws of Mississippi and the Regulations of the State Board of Health governing reportable diseases. All occupational diseases shall be reported on the Clinical Report Card. Occupational diseases shall include dermatitis and other manifestations of poisoning or sensitivity resulting from the use of metals, dusts, gases or vapors in the working environment. Further, it shall be the responsibility of the Division of Industrial Hygiene of the State Board of Health through consultation and close cooperation with the reporting physician to investigate the place of employment giving rise to such diseased condition, to study the manufacturing processes, and to make recommendations for the elimination of the existing hazards and the prevention of further cases. No report made pursuant to the provisions of this Regulation shall be admissible as evidence of the facts therein stated in any action at law against the employer of such person.

Arkansas

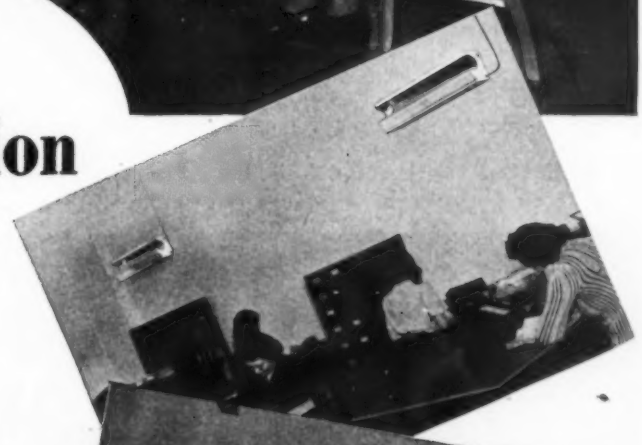
DR. E. E. BARLOW, Chairman, Committee on Industrial Health, in *J. Arkansas Med. Soc.*, June, 1944: During the past year, your Committee on Industrial Health has continued the study of the needs of the physicians in the state for more information concerning the care of the industrial worker. . . . On October 23, 1943, your chairman called a meeting of the Committee on Industrial Health. After some discussion, approval was given the Arkansas State Health Department through its Division of Tuberculosis Control for the holding of diagnostic mass x-ray surveys in industry. On March 23, 1944, Dr. Curtis gave a report on his work during the year as follows: 2,071 individuals have been x-rayed in industrial plants in the state by means of a portable 35 mm. photofluographic unit. Interpretation of this number of miniature films gave the following results: Three cases of active reinfection tuberculosis, requiring immediate therapy; 13 cases of arrested tuberculosis, requiring periodic examinations; 22 cases diagnosed as having pulmonary conditions other than tuberculosis; 62 cases which were suspicious and requiring careful physical examinations and immediate rechecks with large x-rays. Of these 62, 36 were x-rayed on 14 x 17 films by private practitioners. On the basis of physical examinations and the large x-rays these 36 were diagnosed as: Six active cases of reinfection tuberculosis requiring immediate therapy; 11 cases of arrested reinfection tuberculosis requiring no therapy but necessitating periodic check-ups; five were still considered to be suspects requiring further study; 14 were judged to be free from evidence of clinically reinfection tuberculosis; 10 were diagnosed as having pulmonary conditions other than tuberculosis. Thus, out of a group of 2,071 unselected individuals, 22 previously unsuspected cases of adult reinfection pulmonary tuberculosis were discovered. This program will be expanded as soon as additional x-ray equipment can be obtained. The foregoing is a numerical accounting of the activities of the Division of Tuberculosis Control relating to industries. I would like to point out that as a result of the survey of only 2,071 individuals, a total of 85 were referred to their private physicians for additional study and that of this number this department knows of 36 x-rays having been made by private practitioners. As a result of this report, it would thus seem to your Committee that such activities, rather than encroaching upon the private practitioner's field, are materially bringing new patients to him. This is, of course, not such a factor at the present time but should serve to demonstrate that this program will always be of a distinct value to the private practitioner.



An Achievement in Health Conservation

HYGEAIRE

radiant energy affords a proved, inexpensive means of rapidly destroying infectious air-borne bacteria and viruses.



In industrial, institutional and commercial establishments—wherever employees function within confined areas—HYGEAIRE protection combats cross infection and epidemic spread. Resultant air disinfection will markedly reduce absenteeism induced by infectious communicable disease germs.

Natural thermal circulation is sufficient to convey air-suspended bacteria to within the disinfecting field where they are promptly destroyed. Proper installation of the Unit provides against exposure of room occupants to the direct germ-killing beam. Reportedly, the few cents a day it costs to operate is more than compensated for by the maintenance of productive capacity over a given period. Air sanitation pays dividends.

Consult your hospital supply dealer or write us direct . . . . . TODAY

AMERICAN STERILIZER COMPANY
Erie, Pennsylvania

CURRENT ARTICLES of QUALITY

Training of Industrial Physicians

DR. J. T. OLIPHANT, President, Indiana State Medical Association, at the Second Annual Industrial Health Conference, Indianapolis, April 19, 1944; published in *J. Indiana State M. A.*, June, 1944. Text: "You have asked me to talk about the duty of the state medical society toward the training of industrial physicians. In a democratic body such as the Indiana State Medical Association, the question of what is its obligation in any given case might be a subject for prolonged and sometimes a heated debate. It is obvious that no single member has the right to speak for the entire body. Therefore, what I shall say here will express only my own individual opinion.

"I believe that the state society should give every possible support to this movement of training men in industrial medicine. The rapid growth of industrialism and the mass migration of workers from the farm and from small individual enterprise to the factory has left our profession far from abreast of the medical problems presented by industrial employment. The present demand for trained physicians far exceeds the supply.

"The further growth of industry, which most of us see ahead, will call for more and more doctors, so that industrial medicine is likely to become a profitable new field for specialists. Such a field would afford time and opportunity for its practitioners to study that great variety of ailments that we have come to know as industrial diseases. This study would benefit all doctors. It would give time and opportunity to trace the different patterns of accidents and to determine their cause, and thus prevent them. It would lead to better and more uniform methods of treatment of traumatic injuries, thus assuring the injured worker the minimal loss of time and the maximal restoration of function. Best of all, it would establish the industrial physician in a field of his own. He no longer would find it necessary or desirable to do all of the obstetrics, all of the practice of medicine, and all of the general surgery for all of the families of the workers under his care. This should lead to happier relations in the county medical societies, and thus redound to the benefit of the state society. These things are so important that we must support them.

"There is another side to this question which is of so much interest that it should be mentioned here. This concerns the present method of employment of industrial physicians.

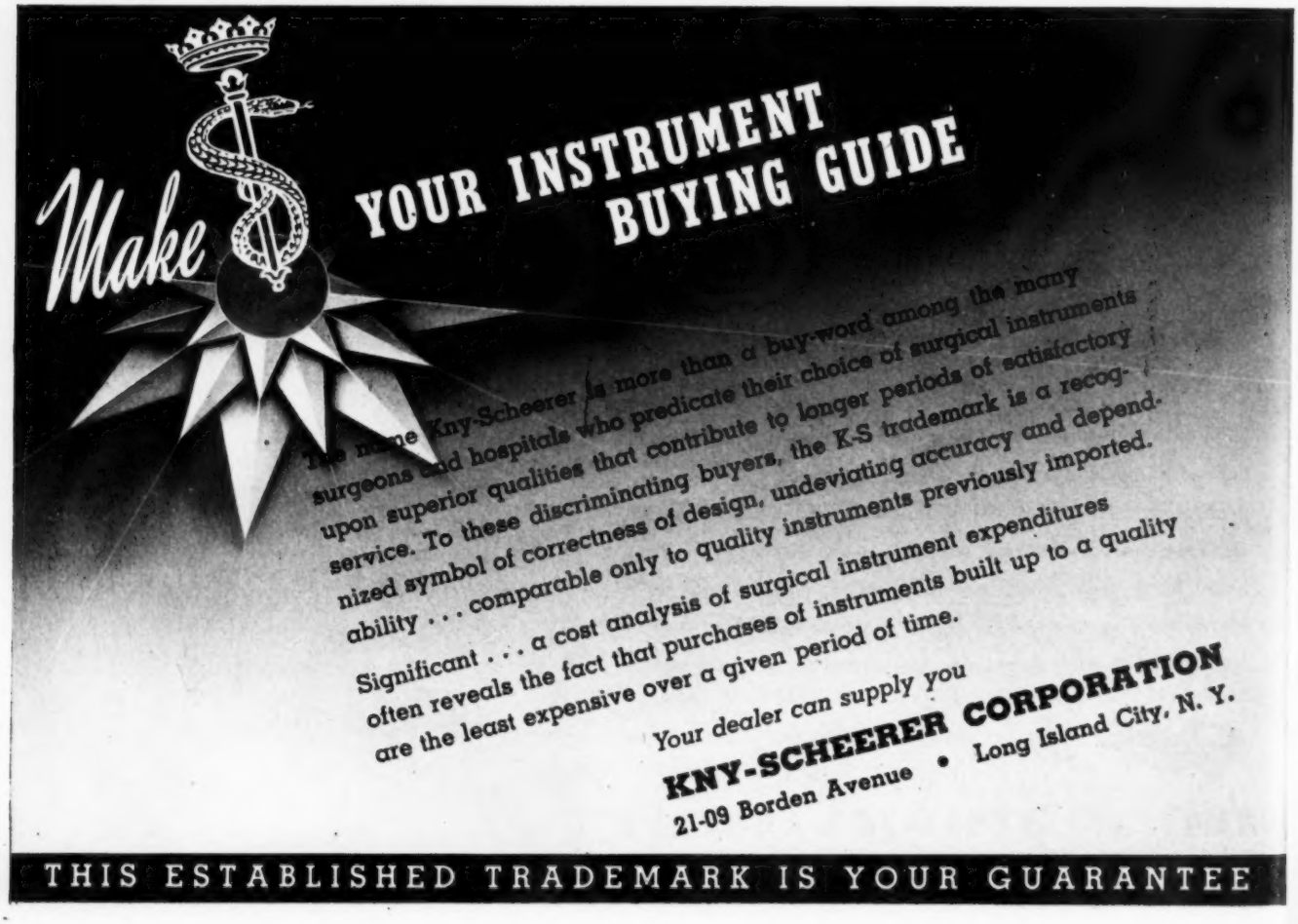
"The present practice is for a plant or its insurance carrier to employ one or more physicians, according to the need, and to pay them either by a salary or on a fee basis or by a combination of the two, and to distribute the services of these doctors, when and as they are needed, to the workers in the plant. This arrangement violates two of the cardinal principles of free medical practice:

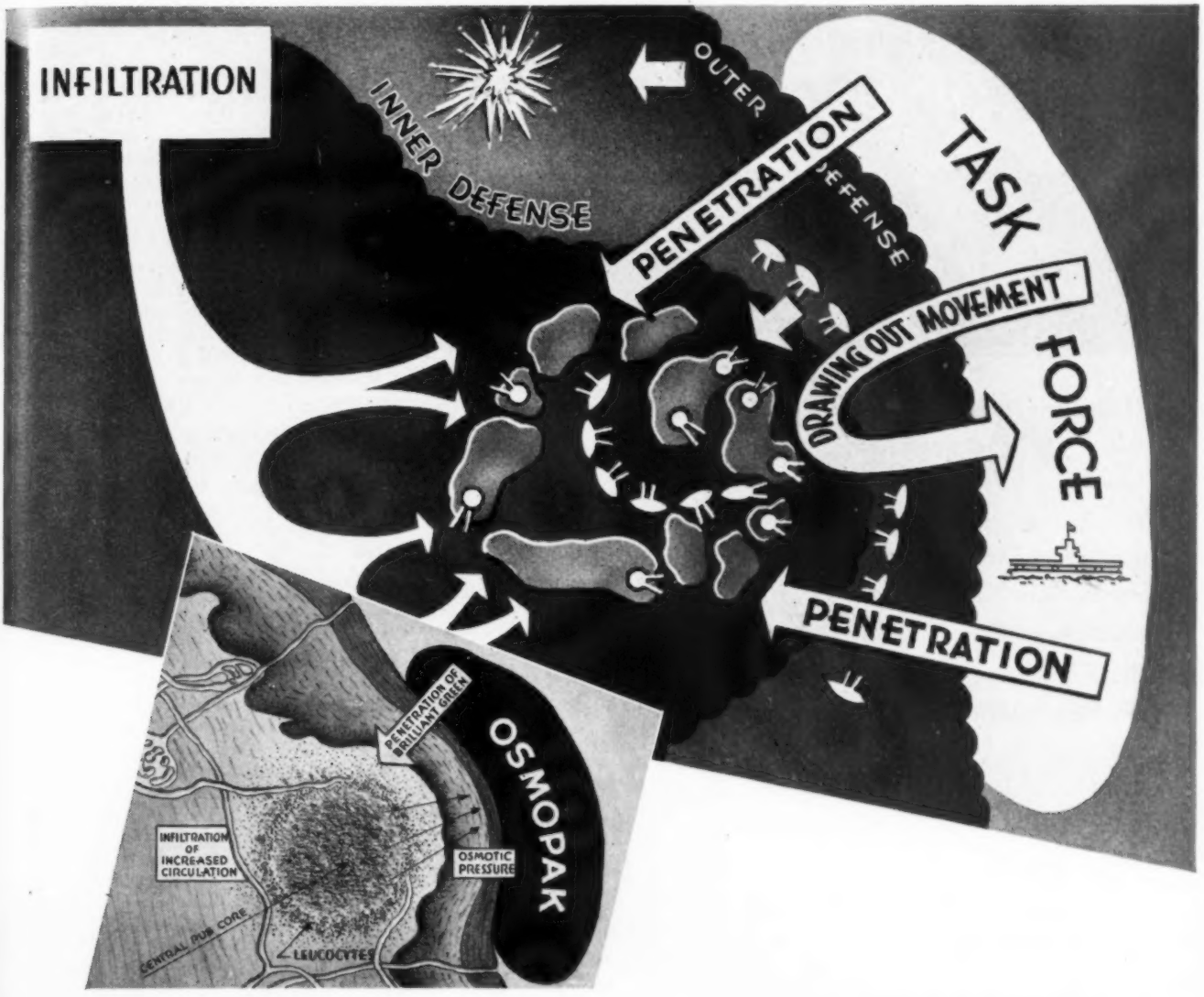
1. It interposes a third party between the doctor and his patient.

2. It does not give the patient the right to his own free choice of a physician.

Our profession is engaged at this moment in a life and death struggle for the free practice of medicine. Our backs are against the wall. We are basing this fight on the principle of 'free doctor-patient relationship.' If we concede that it is right and proper for an industrial corporation to purchase medical services and to distribute them when and as it pleases, by the same logic we must concede that it is proper and right for a political corporation (the city, county, state, or the Federal government) to likewise purchase medical services and distribute them to the citizens.

What is the obligation of the state society to this situation? I can express only my own opinion. I believe that unless there is some modification of this plan; that unless industrial physicians stop selling their services directly to a third party, we very soon shall find that all of us will be in the position in which Haman found himself. We shall be hanged to a very tall scaffold which we, ourselves, have erected in our own dooryard."


Make
YOUR INSTRUMENT BUYING GUIDE
The name Kny-Scheerer is more than a buy-word among the many surgeons and hospitals who predicate their choice of surgical instruments upon superior qualities that contribute to longer periods of satisfactory service. To these discriminating buyers, the K-S trademark is a recognized symbol of correctness of design, undeviating accuracy and dependability . . . comparable only to quality instruments previously imported.
Significant . . . a cost analysis of surgical instrument expenditures often reveals the fact that purchases of instruments built up to a quality are the least expensive over a given period of time.
Your dealer can supply you
KNY-SCHEERER CORPORATION
21-09 Borden Avenue • Long Island City, N. Y.
THIS ESTABLISHED TRADEMARK IS YOUR GUARANTEE



STRATEGY IN DEPLETION

In the edematous, cutaneous infections (furuncles, carbuncles, mild lymphangitis, etc.)—the destruction of pathogens rests more upon the defense mechanisms of the host than upon applied bacteriostasis.

OSMOPAK in these infections affords a positive strategy in defense: *1)* by an effectively high osmotic pressure, it depletes edema and improves circulatory conditions; *2)* by deep-staining bacteriostasis, it controls the area of infection and prevents local reinfection.

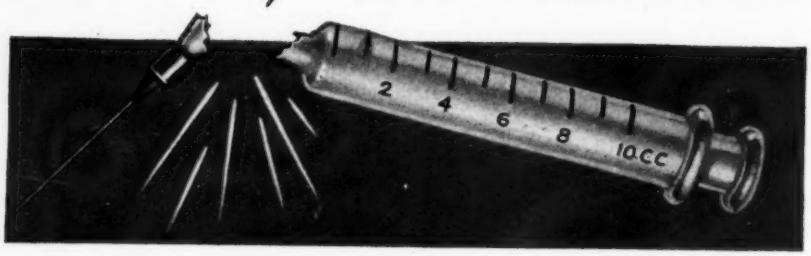
OSMOPAK presents a soft colloidal gel of Magnesium Sulfate, Benzocaine and Brilliant Green. Supply 1½ lb. Jars.

O S M O P A K

(Reg. U. S. Pat. Off.)

IRWIN, NEISLER & CO. SINCE 1886 **DECATUR, ILLINOIS**

90% Intact but . . . 100% USELESS



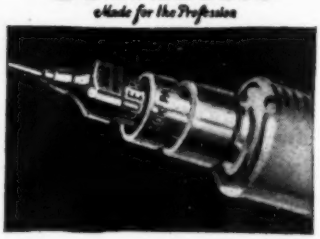
That is the story of more than 50% of all-glass syringes that reach a premature end. Yes, better than half are discarded due to tip breakage.

To eliminate this costly loss many physicians and institutions have turned to Yale-Lok Syringes. Their metal tips will not break. Yale Needles lock on with a half-turn and turn off again as easily.

Records indicate that one B-D Yale-Lok Syringe will, on the average, outlast two or more high-quality all-glass syringes. Yet they cost no more to buy!

B-D PRODUCTS
Made for the Profession

Thus they provide the ultimate in performance — at a substantially lower cost-in-use.



Your dealer carries B-D Yale-Lok Syringes in stock.

B-D Syringes

YALE	MEDICAL CENTER	YALE-LOK
OF SPECIAL RESISTANCE GLASS	OF 'PYREX'	EXTRA STRONG TIP LOCKS WITH B-D NEEDLES

BECTON, DICKINSON & CO., RUTHERFORD, N. J.

Grease Gun Injuries

DR. JOHN JOSEPH BYRNE, Instructor in Surgery, Boston University Medical School, "Grease Gun Injuries," in *J.A.M.A.*, June 10, 1944 (125:6, 405-407). After describing five reported cases, the author details a case of his own. Extract: "The best treatment is prophylactic, and efforts should be made to inform mechanics of the dangers inherent in careless handling of the grease guns. This could be done through circulars issued to filling stations and garages by local health departments and also through permanent labels on the guns applied by the manufacturers. Once the injury has occurred, expectant and conservative treatment in the form of bed rest, sedation and massive dressings at room temperature is all that is available. No hot soaks should be used, since these will increase the tissue demands for blood and in the presence of impaired supply may lead to gangrene. Liberal longitudinal incisions along the involved finger have been advised to release the grease. Most of the grease, however, is dispersed widely throughout the finger and is doubtful if it could be removed by such incisions. Since these cases are usually seen only after the acute reaction has occurred, the incisions would probably devitalize the digital tissue further. Surgery should be limited to the removal of sloughing tissue and/or incision of fluctuant areas when abscesses develop. Early amputation is to be cautioned against, since it is difficult to evaluate the tissue damage beneath the swelling. In Brooke and Rooke's case the finger was indurated and black on the fourth day and yet it was not lost. In the reported case pessimistic consultations of the visiting surgeons should be compared with the final result, in which only a one-centimeter area on the tip of the finger was lost. A general anesthetic should be used if any surgical procedures are undertaken because procaine digital block has been responsible for so many cases of digital gangrene. When subcutaneous oleomas develop, Mason and Queen advise their removal so as to prevent the distressing deformities which may develop. The removal should be performed under general anesthesia and in a bloodless field. Careful dissection of the nodules from the underlying structures should be undertaken so as to be sure that they are entirely removed. If overlying skin is involved, it should be sacrificed and the resultant defect repaired with free or pedicle skin grafts."

Non-tanned Patients

DR. CONRAD R. LAM, Detroit, "The General Care of the Burned Patient," in a symposium on "The Treatment of Burns," in *J.A.M.A.*, June 24, 1944 (125:8, 543-546). Extract: "It is easier to write an article on the general treatment of a patient with burns now than it was two or three years ago. Much controversial matter appears to have been settled, and certain previously recommended procedures can be omitted or will be mentioned only to be condemned. There has been a healthy change in the attitude of surgeons toward thermal injury; the trend has been toward simplification and uniformity, with the burn regarded as a wound which will react favorably to many of the fundamental surgical methods which are commonly used in other kinds of trauma. If this point of view in local treatment is extended to include general care, one may consider that the burned patient differs in only a few respects from patients with other surgical conditions, and this difference is one of degree only. I wish to stress especially that the care of burns has become vastly easier since the abandonment of tanning methods and the adoption of the large occlusive dressings described elsewhere in this symposium. For example, the stage of liver insufficiency and 'toxemia' which so often ended with death on the third to the fifth day is unknown in non-tanned patients. . . . The chemical treatment of burns encompasses shock, its prevention and metabolic consequences, the control of infection, the promotion of wound healing and the maintenance of nutrition. The rationale for the therapy of each is dependent on a knowledge of the pathologic physiology of the burn wound. The wound enlarges the body's reservoir for water, electrolyte and protein. All three should be given in the treatment of shock and in amounts sufficient to restore their normal concentrations. When water only is given, the electrolyte and protein in the plasma and interstitial space become dilute, but water alone is better than no treatment at all. Water and salt will fill the reservoir, but only when plasma protein is given in conjunction does the plasma vol-

NOVEMBER 14, 1666...

DR. SAMUEL PEPYS, in his famous diary, wrote: "*Here Dr. Croone told me that at the meeting at Gresham College tonight, there was a pretty experiment of the blood of one dog let out, til he died, into the body of another on one side, while all his own run out on the other side. The first died upon the place, and the other very well and likely to do well. This did give occasion to many pretty wishes, as of the blood of a Quaker to be let into an Archbishop and such like; but, as Dr. Croone says, may if it takes, be of mighty use to man's health, for the amending of bad blood by borrowing from a better body.*"

DR. PEPYS' notation that transfusion "may if it takes, be of mighty use to man's health" was surely prophetic, for today it is of tremendous therapeutic importance.

But the difficulties of typing and cross-matching where immediate transfusion is necessary pointed to a need for an acceptable blood substitute. Blood plasma was the substitute of choice and now, because dried plasma is not only stable and portable, but also because refrigeration is unnecessary, it is being used more and more wherever plasma is needed.

In addition to supplying Army and Navy requirements for plasma, Sharp & Dohme offer 'LYOVAC' Normal Human Plasma for use in civilian medical practice, using blood from professional donors . . . a project that makes 'LYOVAC' Normal Human Plasma ready for instant use wherever it is needed. Each 250 cc. unit contains approximately as much osmotically active protein as 500 cc. of whole blood.

Sharp & Dohme, Philadelphia 1, Pa.

A development of Sharp & Dohme Research **'LYOVAC' NORMAL HUMAN PLASMA**

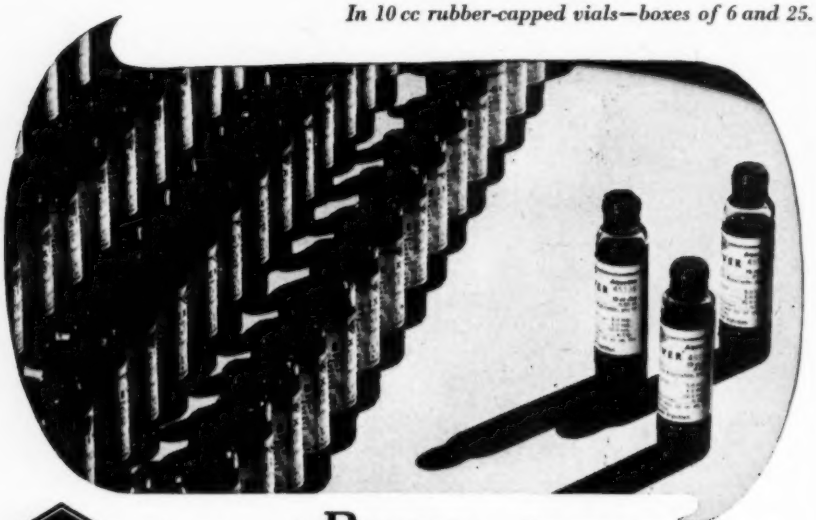
YOU COMMAND... BREON COMPLIES!

You have demanded vigorous means of treating what is coming to be recognized as a distinct clinical entity—the results of deficiency of vitamin B complex. Not pellagra, nor sprue, nor beri-beri, yet, probably akin to all of them. For patients with this veiled and confusing disease, too often turned away as "neurasthenics"—here is—

BEXIVER a new solution of liver and vitamin B complex

for intramuscular use when rapid, certain absorption of these factors in quantity is required. Bexiver is composed of crude liver solution to supply from a natural source both the known and unidentified constituents. It is fortified with the principal B complex vitamins—thiamine, riboflavin, and nicotinamide.

In 10 cc rubber-capped vials—boxes of 6 and 25.



BREON

George A. Breon & Company
KANSAS CITY, MO.

ume possess an adequate colloid osmotic pressure. Even more favorable results than those obtained with sulfadiazine in the control of infection are to be anticipated from the prophylactic use of penicillin. No substance is known which expedites the healing of the wound above that obtained under conditions of normal nutrition and absence of infection. The optimal care of the burn surface consists in covering it promptly with a dressing impervious to bacteria and one which contains nothing injurious to cells."

"Splint 'Em Where They Lie"

DR. J. E. M. THOMSON, Lincoln, Nebraska, "In Case of Accident," in *Nebraska State M. J.*, June, 1944 (29:6, 185-187). Extract: "In case of accident in which there has been a fracture of the lower extremity:

1. 'Splint 'em where they lie.'

2. Use the Thomas splint on any fracture of the lower extremity.

3. Know the technique of its application (it is too often applied carelessly and improperly).

4. For a 'short haul' one may substitute:

(a) In fractures of the hip the legs and thighs may be bound together and the patient kept in the horizontal position.

(b) For fractures above the calf of the leg a long padded board from the axilla to the bottom of the foot may be used.

(c) For fractures below the knee lateral padded splints from the hip to the bottom of the foot may be used.

(d) For fractures about the ankle lateral padded splints from the knee to the bottom of the foot will do or a right angle foot posterior wire gutter splint which is well padded and carefully applied.

"I am indebted to one who is in the European theater for much of the information about the transportation and care of these fractures, and for the following description of a modified Tobruk plaster splint. This splint is used for all fractures of the femur or the knee joint for immobilization for transportation. As I quote, this will probably not fit the illustrations that are used in connection with this editorial, although the principle is the same. After debridement and reduction of the fracture—traction on the leg is maintained by one assistant holding the foot at a right-angle with flexion at the ankle. A second assistant supports the fracture with one hand and holds the knee in ten degrees of flexion with the other. The slight flexion of the knee will eliminate the strain on the posterior capsule with its resulting pain. Adhesive traction strips extend from the dressing down the lateral aspect of the leg and from the level of the fracture down the medial side of the leg. The strips extend some 12 to 18 inches beyond the sole of the foot, and the face of the strips must be smoothed to avoid wrinkles. The traction straps are turned back from the ankle; the malleoli and the heel are padded with two or three layers of cotton sheet wadding. The ends of the strips are returned to these traction positions. The knee cap and head of the fibula are padded with two or three layers of cotton sheet wadding. Two or three turns of cotton sheet wadding are taken at the upper extent of the thigh. A tin strip is placed on the skin on the anterior surface of the leg. A posterior slab of plaster six layers thick is applied extending from the tuberosity of the ischium down the posterior aspect of the leg and extending two inches beyond the tips of the toes. Circular turns of plaster are taken around the slab and tin strip to complete the cast. The slab and plaster must be smoothed carefully to eliminate wrinkles or irregularities which will cause pressure areas. Generous windows are now cut over each malleolus and traction made on the adhesive straps with counter traction on the plaster. This will free them from the cast and allow the pull to be taken on the leg and not on the plaster. A Thomas splint is then applied over the plaster, fitting the ring well against the tuberosity of the ischium. If the ring is too large, a cotton pad or a piece of the soldier's clothing can be fitted between the ring and the thigh which will hold the ring of the splint on the tuberosity of the ischium and away from the perineum. The traction straps are tied over the notch at the end of the splint. A small stick or tongue blade is inserted between the straps and twisted (a Spanish windlass); this will increase and fix or stabilize the traction on the leg. The side bars of the splint are now greased with vaseline and a few turns of plaster taken around the thigh and calf of the leg, which will stabilize the plaster on the splint. The plaster is split on the tin strip

Protective CLEANSING for SKILLED HANDS

TO FAVOR RECOVERY in the dermatoses, replace all harsh or irritating skin detergents with ACIDOLATE* Skin Cleanser.

1. It is a water miscible non-lathering mixture of sulfated oils.
2. It contains no soap, alkali or abrasives.
3. It quickly emulsifies cutaneous soil and facilitates its thorough removal by proper rinsing with water.
4. It emulsifies residual ointments and simplifies their removal from the hair or skin.
5. It leaves the skin feeling soft and cool.
6. Reports from ten clinics attest to its value.

★ ★ ★

Specify ACIDOLATE for use wherever soap is contra-indicated. It is supplied in 8 ounce dispenser bottles and in gallons through leading drug stores.

ACIDOLATE

REG. U.S. PAT. OFF.

Skin Cleanser

**The word Acidolate is the registered trademark of National Oil Products Co.*

Copyright 1944, by National Oil Products Co.

Distributed for NATIONAL OIL PRODUCTS COMPANY *by:*

RARE CHEMICALS, INC.
HARRISON, NEW JERSEY

✦

THE GALEN COMPANY
BERKELEY, CALIFORNIA

MODEL 61

Available AGAIN with
BRASS STERILIZER

Now you can get this big, handsome cabinet with double storage space and drawer, interior light and Formica top, equipped with 16″ Super-Automatic Sterilizer with *brass* tank! Sterilizer has famous Pelton hydraulic cover lift and check; top is designed to be used plain, or as mounting space for Model HP Pelton Autoclave (now available with new "3-in-1" automatic control). Without Autoclave: Eastern Zone, $160; Western, $171.00. With Autoclave: Eastern, $405.00; Western, $421.00.

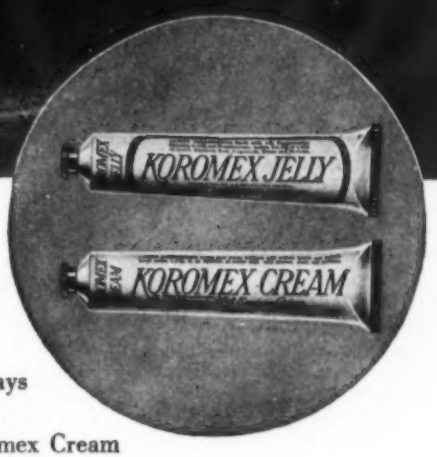
PELTON & CRANE COMPANY • DETROIT 2, MICHIGAN • ESTABLISHED 1900

Pelton STERILIZERS

through all layers from the base of the toes to the upper thigh to allow for swelling. The tin strip is now removed and the cast trimmed one inch distal to the toes, which will protect them from pressure of the blankets."

Union Health Center

DR. LEO PRICE, Director, Union Health Center, in his introduction to the Center's Annual Report for 1943, the 31st year of "a unique institution in American industrial medicine." "Today giving workers good medical care is meeting consideration as both an immediate and postwar problem. How medical care shall be distributed and paid for has become one of the most vital and controversial issues before the public. Labor's share in the responsibility for formulating plans for the medical care of working people has been accepted. The union is recognized as an industrial unit from which many such programs may originate. The strength of a medical institution controlled by labor has been demonstrated by the fact that the Union Health Center never ceased to function, even in the depth of dissension and depression. It is difficult to conceive of the survival of such an institution, were it dependent on voluntary and commercial insurance plans. In periods of depression the need for medical care does not stop because the factory has ceased production. The need is there regardless of whether the worker or the employer can pay an insurance premium. The union has shown that it recognized the fact that in depression the need for medical care is increased. It demonstrated that it was acutely concerned with this need. Labor, aware of its own interests, struggled to preserve what its ideal and substance had built. Every worker and every doctor who had a share in this building feels in it something more than the pride of possession. We evaluate what we have built and we regard it as a contribution to the community and a forward step in industrial medicine. After the passage of the National Recovery Act in 1933 the unions in the garment industry grew in number and strength. The new security made it possible to revive old sickness insurance plans in some local unions and to institute new plans in others. Through this channel the Union Health Center received enough money to extend service, both in quantity and quality, so that the aims and standards of the medical administration were more nearly realized. As general economic conditions improved, it became possible to acquire funds to give more periodic examinations for the prevention of illness. Tuberculosis control was improved by new methods of case finding and a program for stricter control and rehabilitation was effected. Today several unions have incorporated in their sickness insurance plans provision for extended health service which has been designated as 'medical credits.' It is a method of giving relatively high insurance payment in the form of medical service without direct charge. Since it is an extensive service that the insured person could not ordinarily afford, especially when it is basically preventive, its educational value is inestimable. Today we are entering a new period in the extension of service. The financial basis for the expansion rests on the collection of a tax levied on the gross payroll of the manufacturer. The use of the tax for a health program is approved by the War Labor Board, and the government permits the money expended by the manufacturer in this manner to be tax free. This is of social importance because it expresses the government's recognition of the workers' need for care as a national problem. Since this money must be used for a workers' health program, the payroll tax is, in effect, a non-inflationary increase paid in the form of medical services. Under the present apparently good economic conditions the high cost of other necessities makes the purchase of adequate medical care a problem for a large section of workers in spite of the below-cost rates of the Union Health Center. Subsidizing group medicine to the extent where it will be freely available to workers of low economic status is still a problem and a challenge. It is to be hoped that appropri-



with Confidence

Through all the years, the name Koromex has always stood for dependability. Koromex Jelly today has attained its highest spermicidal effectiveness. Koromex Cream (also known as H-R Emulsion Cream) is equally effective, and is offered as an aesthetic alternative to meet the physiological variants. Prescribe Koromex with confidence. Write for literature.

HOLLAND-RANTOS COMPANY, INC. • *New York, Chicago, Los Angeles*

ILLE'S PORTABLE UNIT FOR HYDROMASSAGE
THE IMPROVED WHIRLPOOL BATH

Reduce Disability
QUICKLY, EASILY, ECONOMICALLY

Ille's Portable Unit for Hydromassage is unsurpassed in the efficient treatment of traumatic injuries, sprains, synovitis, bursitis, burns, infections, contusions, adhesions, stiff joints. Invaluable for functional improvement in the after-care of fractures.

Some of the Whirlpool Bath's outstanding features: 1. Moved anywhere without effort. 2. Electric turbine eliminates need for continuous supply of hot water. 3. Affords any desired degree of massage to leg, hip, lower spine, etc.

The Whirlpool Bath is used extensively by Industrial and Civilian Hospitals. Over 3000 Whirlpool Baths in Army, Navy and Marine Hospitals.

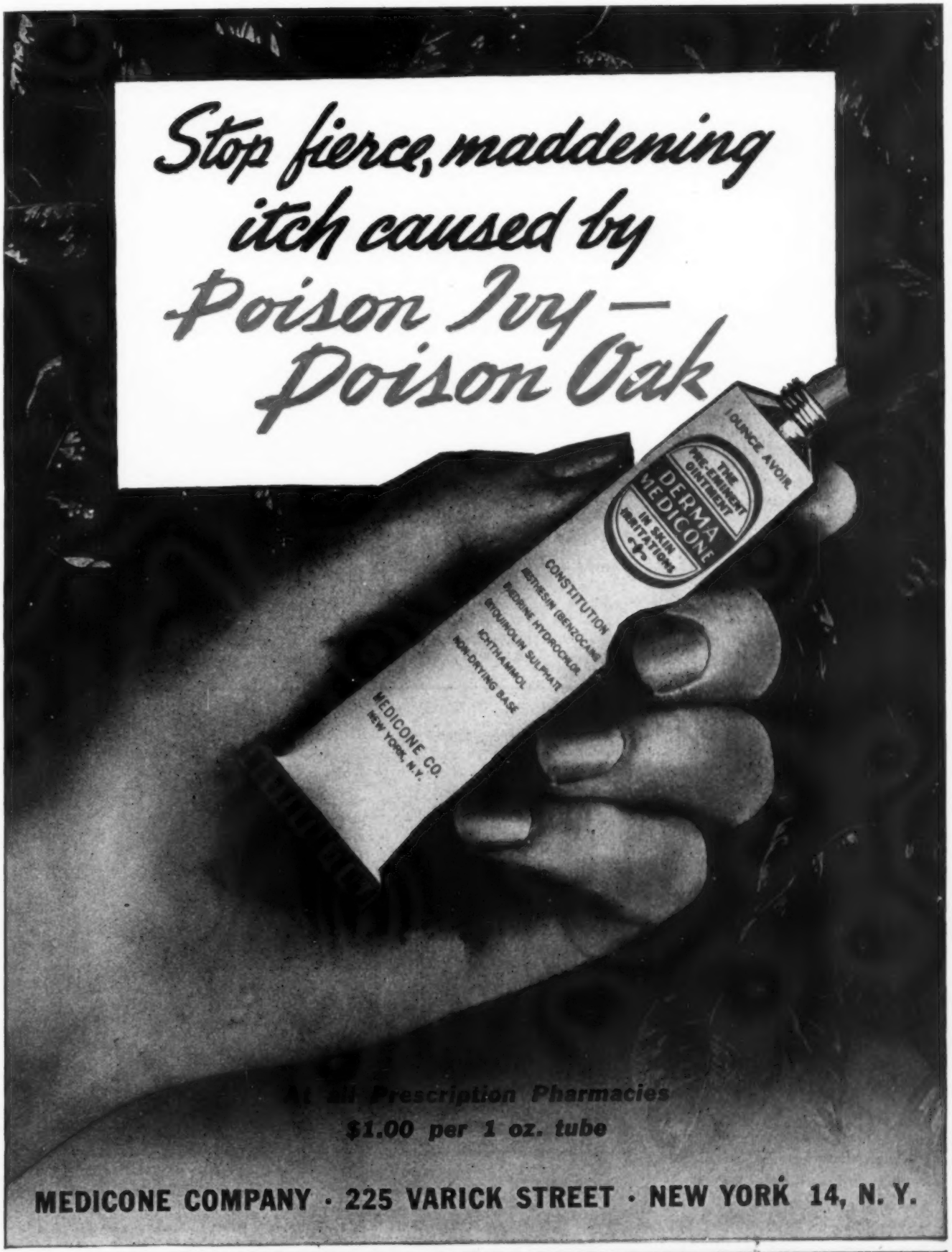
Write for full details

ILLE ELECTRIC CORPORATION
36-08 33rd STREET, LONG ISLAND CITY, N. Y.

ate administration of payroll tax moneys will aid in the solution of this problem."

Medical Service in Industry

DWIGHT O'HARA, M.D., Professor of Preventive Medicine, Tufts College Medical School; visiting physician, Boston City Hospital; physician-in-chief, Waltham Hospital; "Medical Service in Industry," presented at the War Session of the American College of Surgeons, Springfield, Massachusetts, March 20, 1944; published in *New England J. Med.*, June 8, 1944 (230:23, 685-687). Text: "The title assigned to me suggests that there is a field in industry that medicine and surgery may enter and expand. Although this is undoubtedly true, the title might more appropriately read 'Industry in Medical Service,' thus indicating what is an even greater opportunity—that is, for industry to enter into and expand the field of medical service to its employees. I believe this because in the recent past and at the present time there are apparently more physicians ready and willing to enter industrial employment than there are industrial employers to engage them. The Committee on Industrial Health of the Massachusetts Medical Society has definitely found this to be so, even in this period of unprecedented industrial activity, for during the last year and a half it has received from physicians a dozen requests for industrial jobs for every one it has received from industrialists looking for physicians. In this apparent discrepancy between supply and demand there are several noteworthy factors. In the first place, the supply pool, although it contains the names of several outstanding physicians and surgeons in the Commonwealth, is not a good random sample of the medical profession of the state. This is because the vigorous, well-trained physicians of today are apt to be too preoccupied in military and other services to be looking for work. In the second place, the industrialists are not generally aware of the potential usefulness of modern medical service in their business relations with their employees. They do not appreciate that the physiologic principles on which the upkeep of the human machine depends are as important as the mechanical principles on which they keep up their lathes and looms. In the third place, neither the physicians nor the industrialists generally know exactly what they are looking for, because industrial medicine is anything but cut and dried. The field is not so highly specialized as it has sometimes been represented to be; it needs further clarification as a specialty, if indeed it does not need to be reappraised as another form of the general practice of medicine. There are now many types of industrial practice, and there are also many types of physicians engaged in it. They all have in common, however, certain interests that do not permit their straying as far from the fundamental principles and disciplines of medicine as many of the more highly organized specialists may. Within the last few years I have repeatedly heard candidates in Part III of the National Board Examinations request leniency or defiantly refuse to answer questions on the ground that they were not interested. This apathy was due to their intention to devote their talents to psychiatry, radiology or some other special field. They blandly assume that such interests release them from further responsibility in their wider profession. This attitude is sometimes found among third-year and fourth-year medical students, although they are usually discreet enough to keep it to themselves at that stage of their careers. The fact that such limitation of responsibility actually permits a specialist to command a larger income is one of the inconsistencies with which modern medicine has vested itself, and on account of which the cost of medical care has arisen in the large centers of population. The extent to which it has taken over the public's thinking about medicine is well known to those who have questioned the motives of the young men who now seek admission to our medical schools. In the most recent block of such young men whom I have questioned, for example, two out of 21 had already


Stop fierce, maddening itch caused by Poison Ivy — Poison Oak
1 OUNCE AVOIR.
THE PRE-EMINENT OINTMENT
DERMA MEDICONE
IN SKIN IRRITATIONS
CONSTITUTION
BETHESIN (BENZOCAINE)
PHEDRINE HYDROCHLOR.
OXYQUINOLIN SULPHATE
ICHTHAMMOL
NON-DRYING BASE
MEDICONE CO.
NEW YORK, N.Y.
At All Prescription Pharmacies
$1.00 per 1 oz. tube
MEDICONE COMPANY · 225 VARICK STREET · NEW YORK 14, N. Y.
DERMA MEDICONE

decided that they were going to become brain surgeons. Of course everyone appreciates the technical advances that have paralleled this narrowing process. The primary point to be made in connection with it is that no such atrophy of medical and surgical interest or activity is compatible with the practice of industrial medicine. Certain industries have their own peculiar and often specialized problems, but the industrial physician must be ready to be all things to all men most of the time. He must be able to do the thing that general practitioners have always done so well: to decide quickly what is important and urgent, and to use pleasing and soothing devices for the rest. Although these soothing devices have frequently been amusing, they have admirably served their purpose, which is to get the patient out of the way so that the physician can get on with his work. In large plants with well-organized medical departments the industrial physician has greater resources than has the private practitioner, but it is just as necessary for him—or for someone on his staff—to get the employee back to his job as it is for the private physician to get the patient out of his office. My first thought about medical service in industry therefore is that it should be looked on, not as a new specialty in the conventional sense, but as a new application of the general practice of medicine. The medical department of a large plant should and usually does provide a unit with which the family physician can co-operate with complete understanding and confidence. Such co-operation between industrial and family physicians is of the utmost importance in meeting the many problems now facing industry. Among these may be mentioned the breaking in of inexperienced workers, the adjustment of handicapped people to suitable jobs, the frequency rate of accidents, absenteeism following accidents or illness and the incidence of preventable illness. The medical department is interested in all these things, but they are closely and inexorably connected with housing standards, home environments, sickness in the family, previous illnesses and incapacities of workers, shopping, amusement and transportation facilities; in short, the things with which the family physician is traditionally familiar and concerning which he is often consulted. It may thus be said that there are at least two sectors of the home front of industrial health. The medical departments of large industries are universally anxious to correlate the medical command on these sectors, and may be counted on to come more than halfway in any movement toward unification of medical outlook. Most family physicians are now convinced that this is so; if they are not, they are lacking in experience. The private physician may now be expected to work for the welfare of his patient with the medical departments of the large plants as conscientiously as he does with the public-health authorities. In the small plants on the other hand, where the opportunity to support a medical department is usually lacking, there is not apt to be an organized interpretation of medical viewpoints for the management, and the whole subject of medical service gets off to a poor start. Traumatic surgery is generally well cared for and is well followed up by the agents of the insurance companies. Headaches and other minor complaints may be given symptomatic treatment, but there the service rests. The problems referred to in the preceding paragraph are almost unknown because they are not recognized, whereas absenteeism, which cannot escape recognition, becomes just 'one of those things.' There may be a nurse or two in attendance; attending physicians and surgeons are generally called when needed and are usually paid on a fee basis. Representatives of such industries probably do not attend or do not know about the periodic meetings where industrial health is discussed. Obvious hazards are promptly corrected whenever attention is drawn to them, as it not infrequently is by a serious accident. It is true that the agents of these small plants can frequently point to excellent or even 'perfect' safety scores, but such records perhaps depend on the relatively

FREE HELP on Absenteeism for plant nurses and doctors...

A war plant nurse called for help—to reduce the number of absentees among women who were missing 1 to 3 days each month, frequently on "problem days."

Now, the makers of Kotex* Sanitary Napkins offer new, free material to combat this kind of absenteeism in your plant. Two helpful booklets are available to you—an instruction manual for use in classes, a handbook to distribute among your workers. Both are practical—both are *free*. Just mail the coupon. We'll send them to you right away.

*T. M. Reg. U. S. Pat. Off.

Easy-to-read free booklet designed for your workers. Lists do's and don'ts for women. Tells how to feel better and stay on the job regardless of the calendar. Discusses sleeping, drinking, showers, diet, lifting. How to curb cramps, when to see a doctor. Advice for older women.

New Instruction Manual equips plant nurses and doctors to conduct classes for women workers. Gives authoritative facts on menstruation, teaching suggestions, answers to women's questions. Send, too, for free Charts on Menstrual Physiology, for classroom display.

FREE! MAIL TODAY!

INTERNATIONAL CELLUCOTTON PRODUCTS CO.
Box 3434, Chicago 54, Ill.

Without charge or obligation, please send me:

.....copies of "That Day Is Here Again" to distribute to women workers in our plant.

.....a copy of the Instruction Manual "Every Minute Counts" together with Visual Charts on Menstrual Physiology.

Name.....

Address.....

City.....*State*.....

"PHYSIOLOGIC DEBRIDEMENT"
plus
ANTIBACTERIAL ACTION

The efficacy of topical applications of Sulfathiazole for the treatment of a wide variety of localized infections is generally recognized.

The combination of Sulfathiazole with urea possesses distinct advantages. Urea exerts a solvent action on protein matter, thus aiding the removal of debris, pus and incrustations. Due to this cleansing effect ("physiologic debridement"), healing is greatly encouraged. Moreover, with the dissolution of necrotic tissue and the lysis of bacteria, inhibitors to the sulfonamides are removed. Hence, sulfathiazole can exert its full antibacterial effect.

INDICATIONS

For topical infections due to staphylococcus, streptococcus and other organisms — impetigo contagiosa, superficial folliculitis, intertrigo, secondary infections associated with various dermatoses and fungus infections, minor surgical conditions, etc.

Supplied in 1 ounce tubes

Sulfathiazole-Urea Ointment contains 5 per cent Sulfathiazole and 30 per cent urea in an oxycholesterol-petrolatum base.

SULFATHIAZOLE-UREA OINTMENT WINTHROP

WINTHROP CHEMICAL COMPANY, INC.

NEW YORK 13, N. Y. *Pharmaceuticals of merit for the physician* WINDSOR, ONT.

ERTRON

Only ERTRON meets all these requirements:

1. Successful therapy of large numbers of arthritis patients.
2. Safety in massive dosage reported in large series of cases.
3. Ten years of comprehensive research.
4. Extensive bibliographic background.
5. Ertron alone—and no other product—contains electrically activated, vaporized ergosterol (Whittier Process).

Ertronize the Arthritic

TO ERTRONIZE—Employ ERTRON* in adequate dosage over a sufficiently long period to produce beneficial results. Gradually increase the dosage to the toleration level. Maintain this dosage until maximum improvement occurs.

Supplied in bottles of 100 and 500 capsules.

ETHICALLY PROMOTED.

*Reg. U. S. Pat. Off.

Ertron Parenteral

For the physician who wishes to supplement the routine oral administration of ERTRON by parenteral injections, ERTRON Parenteral is available in packages of six 1 cc. ampules. Each ampule contains 500,000 U.S.P. units of electrically activated vaporized ergosterol (Whittier Process).

Do You Want Reprints?

The following reprints are available—please check those you want, and send your card or letterhead.

Levinthal, D. H., Logan, C. E., Kohn, K. H., and Fishbein, W. I.: Practical Management of Arthritis—Medical and Orthopedic, Industrial Medicine, 13:377 (May) 1944.

Snyder, R. G., Squires, W. H., Forster, J. W. and Rudd, E.: A Comparative Study of Ultraviolet Irradiated Ergosterol (Steenbock Process) and Electrically Activated Ergosterol (Whittier Process)—A Preliminary Report, Journal-Lancet, 114:25 (Jan.) 1944.

Goldberg, S. A.: The Pathology of Arthritis, Amer. J. Clinical Pathology, 14:1 (Jan.) 1944.

Ziskin, D. E., Gibson, Jr., J. A., Skarka, A. and Bellows, J. W.: Effect of Large Daily Doses of Vitamin D on Teeth and Jaws of Rats and on Humans, J. Dental Research, 22:457 (Dec.) 1943.

Reynolds, C. and Burns, E. L.: The Effect on the Rat of Prolonged Administration of Large Doses of Electrically Activated Vaporized Ergosterol, Indust. Med., 12:835 (Dec.) 1943.

Snyder, R. G., Squires, W. H., Forster, J. W. and Rudd, E.: The Therapeutic Value of Electrically Activated Ergosterol when Administered Intramuscularly—A Preliminary Report, Indust. Med., 12:633 (Oct.) 1943.

Snyder, R. G., Squires, W. H., and Forster, J. W.: A Six-Year Study of Arthritis Therapy with Special Reference to the Pharmacology, Toxicology and Therapeutics, Indust. Med., 12:291 (May) 1943.

Levinthal, D. H. and Logan, C. E.: The Orthopedic and Medical Management of Arthritis, Journal-Lancet, 63:48 (Feb.) 1943.

Complete bibliography available upon request.

NUTRITION RESEARCH LABORATORIES

CHICAGO

ERTRON

NO BOILING NO MEASURING NO TEST TUBES NO BREAKAGE

Tests for Sugar and Acetone in Diabetic Urine Simplified

Acetone Test (DENCO) AND *Galatest*

Acetone Test (DENCO) detects presence or absence of acetone in urine in one minute. Color reaction is identical to that found in violet ring tests. A trace of acetone turns the powder light lavender —larger amounts to dark purple.

Galatest is the dry reagent for the immediate detection of urine sugar. If sugar is present to any pathological degree—powder turns gray or black immediately—depending on the amount of urine sugar present.

Accepted for Advertising in the Journal of the American Medical Association

Acetone Test (DENCO)... *Galatest*
THE DENVER CHEMICAL MANUFACTURING COMPANY
163 Varick Street, New York 13, N. Y.

SAME SIMPLE TECHNIQUE FOR BOTH TESTS

1. A Little Powder 2. A Little Urine

Color Reaction Immediately

Handy Kit Available for Diabetic Patient or Medical Bag

Contains one vial Acetone Test (Denco), one vial of Galatest (enough in each vial for at least 100 tests), a medicine dropper and a Galatest color chart. This handy kit and refills of Acetone Test (Denco) and Galatest can be obtained at all prescription pharmacies and surgical supply houses.

small number of employees involved or on the nonhazardous character of the particular trade that they ply. Of course many small industrial establishments are thoroughly healthful places in which to be employed. The chances are, however, that they are healthful places because someone not only has made an effort to make them so but also is attempting to keep them so. The importance of these small plants in Massachusetts rests on the fact that their employees aggregate approximately three quarters of the men and women industrially employed within the Commonwealth. The problem is therefore large and complex, and because of the many small and diversified units into which it breaks down, it is a difficult problem. It is difficult from the employer's point of view because he cannot visualize a private medical department within his small plant any more than he can a private fire department. It is difficult from the physician's point of view because he cannot easily concentrate on the preventive aspects of an assignment that is really a very small part, and not at all an urgent one, of his total responsibility. Unless the employer or his physician can become enthusiastic about his admittedly little share of this big problem, not much progress can be made. If such progress is to be accomplished it is necessary to find an *enthusiast* —whether he is a manager, a physician, a foreman, a nurse or a janitor. He may be any intelligent person who will deliberately view a plant and ask himself about the possibilities of injury from fluids, dusts or metals. If his survey raises any suspicion that the worker's health is being undermined, the hunt is on. The physician who has this enthusiasm and interest is the ideal hunter. If he has practiced medicine successfully he will enjoy in a greater degree than do others, the confidence of those who know him, and as a physician he will have a natural knowledge of physiology on which he may build and through which he may be able to answer many primary questions. Indeed, the general practitioner may have an approach that gives him fundamental advantages over other persons, even over specially trained industrial hygienists. No person who is not enthusiastic about the idea as a whole, however, will be likely to succeed in producing results. There is a most useful group of people who are now organized and available in almost every community—the people who variously call themselves district, visiting or community-health nurses. They are in a particularly strategic position to promote industrial health in small plants, especially if the casually employed plant physician will give them the 'green light.' They are not expensive or intrusive; they are familiar and in daily touch with public-health regulations; they enjoy the confidence of the people and of the medical profession; if given slight encouragement by a few small plants they can afford to assign one of their staff to inform herself specifically in the principles of industrial hygiene. I have been much interested in watching the evolution of such a district nursing group in a city of 40,000 population with which I am familiar. They have successively trained different persons on their staff, so that in addition to what they call a 'diabetic nurse' and a nutritionist they now have two members who have been trained in the elements of industrial hygiene. One of these nurses recently learned, almost surreptitiously, of a skin blemish that on tactful investigation was found to be part of a widespread epidemic of cutting-oil dermatitis among a group of women machinists whose thighs were exposed through absorbent overalls. Because their hands and faces were not involved these workers had not complained and had kept the condition of their legs to themselves. Medical advice led to proper protection and remedial measures, which promptly ended the trouble. The nurse has traditionally held an intermediary position between the physician and his clientele; she can make or ruin him professionally almost as easily as his wife can make or ruin him socially. The nurse can as readily promote or neutralize industrial health; in the large and medium-sized plants she has already demonstrated her great value and has successfully promoted the health of the workers in many ways. In the small plants she must, however, be alert and resourceful; she must have a broad horizon, an active imagina-

MULTIPLE SHADOWS

Because deficiency states have frequently failed to respond completely to treatment with a single vitamin, clinicians have adopted a policy of mixed vitamin therapy.

White's Neo Multi-Vi Capsules provide a potent, rationally balanced 8 vitamin formula—including all vitamins known to be essential, in amounts substantially greater than adult daily requirements, yet not wastefully in excess of the average patient's needs.

NEO MULTI-VI CAPSULES

FORMULA:

VITAMIN A	5000 U.S.P. Units
VITAMIN D	500 U.S.P. Units
THIAMINE HYDROCHLORIDE, U.S.P.	1.5 mg.
RIBOFLAVIN	2.5 mg.
PYRIDOXINE HYDROCHLORIDE	1 mg.
CALCIUM PANTOTHENATE	1 mg.
NICOTINAMIDE	20 mg.
ASCORBIC ACID, U.S.P.	50 mg.

Ethically promoted
—not advertised to the laity.

WHITE LABORATORIES, INC.
Pharmaceutical Manufacturers,
Newark 7, N. J.

AVAILABLE IN BOTTLES OF 25 • 100 • 500 • 1000 AND 5000 CAPSULES

"Total" Therapy

FOR INDUSTRIAL DERMATITIS

"The therapy of a majority of the cases of contact dermatitis encountered in industry", according to the noted dermatologist, Dr. Frank C. Combes[1], "requires no further medication than the intelligent use of a *good buffer solution such as Liquor Aluminum Acetate (Burow's solution)* . . . and a *good crude coal-tar paste.*"

His preference for wet dressings solution is **Domeboro Tabs** ("widely used in industry", particularly by Parkes[2] at Curtiss Wright for cutting-oil dermatitis)—because it is "a convenient tablet which, when dissolved in water, releases a *lead-free aluminum acetate in appropriate dilution,*" with a substantial percentage of boric acid.

The *crude coal-tar paste* used at New York University, according to Combes, "is manufactured commercially under the name **Daxalan**"—which has been found *superior to distillates, filtrates and pastes containing liquor picis carbonis.*

It must be properly applied for "optimum benefit", and Combes advises thinning with **Domolene** for spreading over a large area—because in his judgment its hydrophilic ointment base "does not materially lessen the therapeutic efficacy of the paste."

With tissue repair under way, and only erythema remaining, the use of **Domeboro Ointment** (each ounce of which, in a special hydrophilic base, possesses the therapeutic action of one Domeboro Tab diluted in a pint of water), permits a quicker return to work, while healing is promoted by its efficient topical action.

(1) Combes, F. C.: Indus. Med., July, 1944.
(2) Parkes, Morey: Indus. Med., January, 1944.

Samples and full details gladly sent on request

DOME CHEMICALS, INC.
250 EAST 43rd STREET • NEW YORK 17, N. Y.
Canadian Distributor: F. J. Whitlow & Co., Ltd., 165 Dufferin Street, Toronto, Ont., Canada

tion and vigor if she is to keep herself from settling back into a soft corner, where she has to knit and read while she waits for the opportunity to paint iodine on a hangnail. It seems that the small plant must be guarded against this leisurely sort of nursing routine, and for this reason the district nursing type of setup is extremely appealing. These district nurses have the added advantage that they are in close touch with the homes, the schools and the families of the men and women with whom they work. It is again the same advantage that the general practitioner enjoys—that of not being limited by the fence that surrounds the plant. The scope of industrial medicine, like that of preventive medicine, can have no such limit. It is doubtful whether the managements of three or four different small plants could agree for long on the terms under which they might jointly employ an industrial nurse, but there is no doubt at all that they could all deal satisfactorily with an independent district-nursing organization. The independent organization, by working on a hourly basis, can adjust the service to the times that will meet the needs of each plant, thus relieving the plant managers of the vexing problem of deciding whether they should employ their nurses on full-time, half-time or quarter-time periods. It should appeal to the economic sense of businessmen to be able to buy only what they need. This is the best solution I have yet seen in operation for giving to small and moderate-sized industrial enterprises something that they can afford and that their employees are entitled to. "SUMMARY: Although single industries may expose their workers to special hazards, the practice of industrial medicine is a form of the general practice of medicine.

"At the present time medical service is well organized in many of the large plants. Private practitioners should cooperate with the medical authorities of these plants as they do with public-health authorities.

"Medical service in the small plants in Massachusetts is not well developed. It has been and can be developed by district-nursing groups in an efficient and economic manner. Private practitioners may well take the lead in this matter."

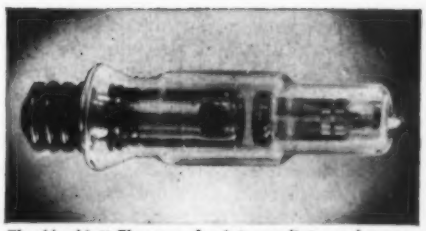
Less Than a Penny a Day

DR. F. C. SMITH, Medical Director, War Department, "The War Department's Health Program in Washington," in *Personnel Administration,* March, 1944 (6:7, 10-12). Extract: "Emergency treatment in Washington, D. C., for injuries and sudden illness was provided by the Office of the Secretary of War, July 14, 1941, when trained nurses were first placed on duty and proper equipment supplied. On October 5, 1942, the organization was enlarged, staff physicians and technicians added and the general principles of industrial medicine applied. A case finding tuberculosis program was instituted under the guidance of a competent specialist and a well qualified specialist in psychiatry and neurology also added to the staff. A health educational program was launched at the same time under the direction of a well-trained health educationalist, the purpose of the program being to conserve and improve the general health of employees. The Civilian Medical Division now maintains a staff of 53 persons, including seven physicians, of whom three are women, 30 nurses, several technicians, and a health education director. There are 17 emergency rooms in 13 War Department buildings, serving approximately 50,000 persons, including cafeteria personnel and some others privately employed, but working in government buildings. In all these units there are beds with hospital mattresses and clean linen in sufficient numbers to accommodate persons of both sexes who are brought in by stretcher or wheel chair or for any reason need rest in bed for temporary periods. The Central Medical Unit in the Pentagon Building responds to calls from emergency rooms where only a nurse is on duty, although each building is visited at regular intervals by a staff physician with whom the nurse makes appointments for employees desiring to consult a physician for non-emergency matters. The objectives of the Civilian Medical Division are of course to improve the health of the employee and thereby increase efficiency and reduce absenteeism. The staff is on the alert at all times to detect diseases or disabilities needing treatment. Minor aches and pains are treated to allow an employee to continue at his work without absenting himself to seek treatment from his private physician. Foreign bodies are removed from the eye, small lacerations are sutured, splinters ex-

In designing a new electronic tube, mathematical calculations are invaluable, but as every designer knows, they are but preliminaries. After them, there usually come many tests of various experimental tubes. Machlett thought the cut-and-try method not only wasteful, but not productive of the best results. So we shortened and simplified the procedure by what our laboratory people call the "rubber model."

Here is a stretched rubber sheet. At the high end is a model of the cathode (electron emitter) of a proposed tube, and at the other end the anode, or target of an X-ray tube, plate of an oscillator or rectifier. The slope between the two is proportional to the desired potential difference. By means of an electro-magnet, a steel ball can be held in any position along the cathode, then released to roll under gravity to the anode, where the point it strikes can be observed and measured. *This is an electro-mechanical analogy.*

By means of this rubber model technique, months have been shortened into days, weeks into hours. More than that, new and higher performance has been achieved in the final product, so that when you buy a Machlett tube, you are assured of precise results, longer life, greater economy . . . Machlett Laboratories, Inc., Springdale, Connecticut.



The Machlett Thermax for intermediate and superficial therapy, accepted the world over for such use. The original tube to be supplied in a shockproof and rayproof housing.

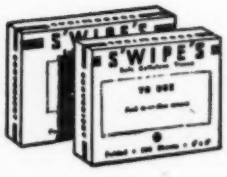
MACHLETT
X-RAY TUBES SINCE 1878
TODAY THEIR LARGEST MAKER

S'WIPE'S*

*TRADE MARK REG. U. S. PATENT OFFICE

Cellulose Wipes

In Boxes . . . In Bulk



Flat sizes, Bulk Packing: 5 x 6" and 5 x 9".

Folded sizes, Bulk Packing: 4 x 6", 5 x 6", 6 x 6" and 5 x 9".

Flat sizes, Boxed: 5x 6".

Folded sizes, Boxed: 4 x 6", 5 x 6", 5 x 9". Various packings as to sheets per box and boxes per carton.

Your Dealer can give you details or write us for price list showing Dealer's List prices.

Due to conditions beyond our control, we are not always in position to supply all items shown on our price lists or advertised herein.

Product of

THE GENERAL CELLULOSE CO., Inc.

GARWOOD, NEW JERSEY

Member, American Surgical Trade Assn., Hospital Industries Assn. and Nat'l Assn. of Mfrs.

tracted, boils opened, abscesses drained, and minor diseases treated. Antitetanic serum is given for punctured wounds and local anesthesia used in eye and other injuries when indicated. Approximately 1,000 employees visit the various emergency rooms each working day. In case of sudden illness, first aid is furnished. If more than emergency treatment is necessary, members of the staff ascertain the character of medical service needed, and if the employee is a stranger in the city and does not have a family physician, he is assisted to select a physician and an immediate appointment is made. As a large number of physicians, surgeons, dentists, and specialists have entered the military and naval services, it has not always been easy to obtain prompt medical care in the various specialties, but this task is cheerfully undertaken and successfully accomplished many times each day by the staff physicians and nurses. Patients are found with goiter, diabetes, hyperinsulinism, deformities, venereal disease, hypertension, and many other disabilities that cannot be relieved with the simple office equipment of industrial medicine and they are urged to consult specialists. Appointments with a physician are made in the manner described above usually before the patient leaves the office. The salvaging of the physically handicapped, including those with defective vision and impaired hearing, epileptics, and persons emotionally unstable, has been gratifying. Counselors and supervisors have unfailingly cooperated in placement problems. . . . The cost of medical service furnished in private industrial establishments varies from $5.00 to $10.00 per employee per annum. Our costs, which are chiefly those relating to salaries and supplies, amount at present to $2.37 for each employee per annum, or less than one cent per day. . . . Up to date, approximately 22,000 persons requesting (chest x-ray) service have been examined, and the usual amount of tuberculosis known to exist in the various age groups has been found. Beginning lung disease has been detected often many months before the patient would have felt ill enough to consult a physician. Cardiac insufficiency, and lung pathology such as bronchiectasis, lung tumors, lung cysts, etc., were disclosed by the x-ray of the chest, as well as tuberculosis. Everyone whose x-ray showed any suspicious lung markings or other abnormalities was interviewed and examined clinically. Following this, patients are referred to their family physician or to a clinic such as the excellent public clinic operated by the District of Columbia Health Department, or to a specialist. . . . Following is a statement of the number of employees and the ailments for which they were treated during the months of December and January in the Emergency Rooms under the supervision of the Office of the Secretary of War:

Illness	December	January
Respiratory tract	10,642*	5,583
Gastro-intestinal	1,642	1,870
Acute communicable diseases	7	14
All other medical	5,234	5,185
Surgical	3,402	3,657
Gynecological	1,391	1,663
Eye	1,082	1,101
Ear, nose, and throat	4,220	3,632
Dental	454	593
Hypos	450	457
Total Patients for Month	28,524	23,755
First visits	19,819	16,365
Re-visits	8,705	7,390
Seen by staff doctors	2,365	2,352
Referred to private M.D. or D.D.S.	456	295
Sent to U.S.P.H.S.	44	47
Sent home by doctor or nurse.	1,391	420
Compensable cases, first visits	899	860
Compensable cases, re-visits	242	303
Non-compensable cases	27,383	22,592
Reporting to medical division after absence on account of illness	5,332	5,512

*Mild influenza very prevalent in December."

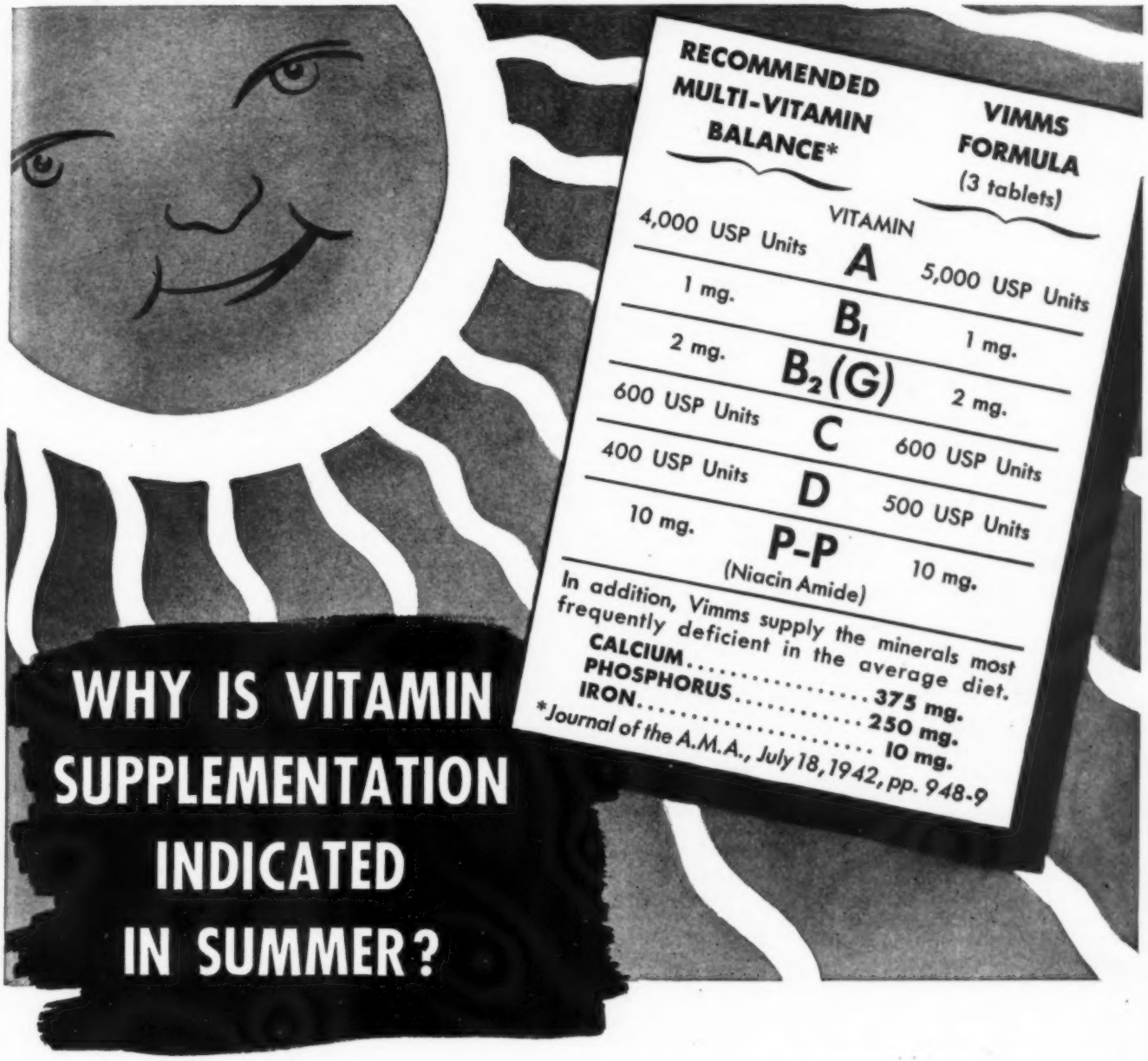
BOOKS

A Study in Reviews

INDUSTRIAL OPHTHALMOLOGY. By HEDWIG S. KUHN, M.D. Cloth. Price $6.50. pp. 294, with 114 illustrations. St. Louis, C. V. Mosby Company, 1944.

I.

THIS excellent book will be of unusual interest to all who practice industrial ophthalmology and truly an eye opener to those not engaged directly in this type of work. The importance of complete familiarity on the part of the ophthalmologist with the problems of industries and his actual occasional presence in the plants, and with the employees to whom he gives service, is brought home strikingly to the reader. Most ophthalmologists probably never visit industrial plants with a view to helping solve the eye problems connected with them, but merely perform refractions when


RECOMMENDED MULTI-VITAMIN BALANCE*
VIMMS FORMULA (3 tablets)
VITAMIN
4,000 USP Units A 5,000 USP Units
1 mg. B1 1 mg.
2 mg. B2(G) 2 mg.
600 USP Units C 600 USP Units
400 USP Units D 500 USP Units
10 mg. P-P (Niacin Amide) 10 mg.
In addition, Vimms supply the minerals most frequently deficient in the average diet.
CALCIUM ..... 375 mg.
PHOSPHORUS ..... 250 mg.
IRON ..... 10 mg.
*Journal of the A.M.A., July 18, 1942, pp. 948-9
WHY IS VITAMIN SUPPLEMENTATION INDICATED IN SUMMER?

ON the evidence, dietary lack seems to be at least as widespread in summer as in winter. This is partly due to the instability of the labile factors in food, to poorer appetites, to the changed character of summer meals—more liquids, carbohydrates; less meats. It has been shown that American diets often reach their *lowest* nutritive mark in summer![1]

The Vimms formula (3 tablets) provides high nutritional insurance for your patients. Vimms contain full minimum requirements for *all* the vitamins known to be essential in the diet, and ample quantities of Calcium and Phosphorus, needed with Vitamins C and D for proper utilization—and Iron, so frequently deficient in the average diet.

If all the vitamins and minerals in Vimms were in one tablet or capsule, it would be too big to swallow comfortably. That's why no one tablet or capsule a day can supply all the vitamins and minerals in Vimms.

[1] *U. S. Dept. of Agriculture Circular 507 (1939)*

Vimms' potencies are chemically and biologically controlled. Tests on human subjects show that the vitamins are readily available for absorption. The tablets are palatable; can be chewed or swallowed.

* * *

For professional samples write to Pharmaceutical Division, Lever Brothers Company, Department IM-01, Cambridge, Mass. (Offer good in U.S.A. only.)

50¢ for 24; $1.75 for 96; $4.50 for 288.

the employees are sent from the factories, and take care of injuries, and occasionally represent the company or the individual in court.

The possibilities of being of service in the plants and to the workers therein by instituting good lighting, advocating the use of protective goggles especially adapted for the work for which they are to be used, and the prescribing of spectacle lenses arranged for the proper working distances of the individual are subjects carefully considered by the author. The material used in preliminary extest objects such as those for stereopsis, color, and others for particular types of work, are outlined. Considerable space is given to the evaluation of amination, and the need of special visual defects in the production of accidents. The reader will be convinced that his expert advice, provided he has educated himself properly to give such advice, will be of great importance to the plant in increasing production and saving lost hours from ineffective work due to poor vision and in the prevention of accidents.

An excellent chapter on industrial injuries from solid bodies has been written by Dr. Albert C. Snell. Prophylaxis and treatment are included. Many seemingly trivial but undoubtedly important points are brought out in the chapter on eye protection. Attention is called to such matters as the care of goggles and the importance of having clean paper or antifogging solution readily available. Another point is the value of the constant attendance in large plants of an optician with an instrument carriage that can be moved from worker to worker for the adjustment of the spectacles, for the repair of breaks, and, in general, for servicing spectacles. Considerable discussion is given to welding, also to actinic or flash conjunctivitis and epidemic keratoconjunctivitis.

In the appendix are discussed toxic hazards, and there is a glossary of terms. A program for industry is outlined and, finally, the appraisal of loss of visual efficiency as approved by the Section of Ophthalmology of the American Medical Association in 1940 is added. There is a good index and the book is well illustrated throughout. (LAWRENCE T. POST, in *American Journal of Ophthalmology*, 27: 6, June, 1944).

II.

IN THE introduction the author makes the statement that "industrial ophthalmology as a special field has not been previously dealt with as a comprehensive treatise," and "many monograph apposite to this field have been published." Both of these statements bear scrutiny. Throughout the long and stilted introduction there are many statements made, based on the author's limited field of industry—without reference to the work of others—which show a peculiarly mixed medical and psychologic approach to the problem of industrial ophthalmology. Industrial medicine has come into its own only within the past 10 years, stimulated more recently by the war with the enormous increase in defense plants. Previous to the augmentation of the so-called heavy industries, with which the author is entirely concerned, there existed in this country many and various lighter industries, which also have been increased. Many of the latter have had industrial eye programs for years which are much simpler and more workable than that outlined (sic) by the author. The excellent work accomplished by such industries as the Pullman Company, Sears, Roebuck and Company and the General Motors Company are given scant attention. The subject of illumination in industry, as it concerns the eyes, is given approximately two pages, while the literature on this subject fills volumes. Chapter IV, on industrial eye injuries caused by solid bodies, written by Dr. Albert C. Snell, which contains a treatise concerning sulfonamide drugs in ocular infections, is excellent. There are many illustrations showing the various jobs and machinery used in the heavy industries. The average industrial ophthalmologist and certainly the industrial physician will find little of use, except for the chapter by Dr. Snell, in this very unpractical monograph. (*Journal of the American Medical Association*, July 8, 1944, pp. 757-58.)

WANTED: Industrial Hygienist to conduct surveys of industrial plants for large insurance company with complete laboratory facilities and field testing equipment. This is an excellent opportunity for a permanent, *not a war-period*, position. State age, family status, education, experience, qualifications, and minimum salary. Address INDUSTRIAL MEDICINE, 605 N. Michigan Ave., Chicago 11.

III.

THERE are two good reasons why this is an important book to those who do any kind of industrial medical work, and especially to plant physicians and industrial ophthalmologists: (1) it is of vital significance in the development of an industrial health program that medical specialists of all kinds who are useful to industry should so adapt themselves and work out a program in which any particular specialty can be of service to industry—that this is gradually developing and becoming more important is now very evident; (2) the work done by Dr. Hedwig Kuhn, Dr. Joseph Tiffin, at Purdue, and such medical directors as Dr. H. Glenn Gardiner, of Foote Bros. Gear & Machine Corp., substantially indicates that a very good start has been made in what has been called scientific job placement, where the essence of such good scientific job placement consists in knowing the job requirements (in this case visually) and then knowing the capacity (in this case visual) of each individual examined, and thereby being able to do the type of scientific job placement which is sorely needed in many industries today. It is the reviewer's belief that the use of the ortho-rater in such a program has supplied the first significant and scientific example of this type of placement.

The reviewer has had the advantage of observing these programs at close range, both in industrial establishments and in office practice, and, moreover, in visiting the training classes at Purdue under the direction of Dr. Joseph Tiffin (professor of industrial psychology) and his associates, as well as speaking informally to these classes on several occasions. It is, therefore, with this background that this review is given.

The foreword by Dr. Albert C. Snell "states the case." It must be very evident to anyone who reads this foreword what the book contains and the kind of work which has been done. The introduction by the author carries on in more detail and outlines some of the problems.

The subject matter is divided into six chapters and an appendix, considering visual testing in industry; correction of visual defects for the job; visual skills; industrial eye injuries caused by solid bodies (by Dr. Albert C. Snell); eye protection; and recent developments as related to industrial eye problems. The appendix contains a list of toxic hazards, a glossary of toxic substances, a program for eyes in industry, and the standard method for the appraisal for the loss of visual efficiency, as published by the A.M.A.

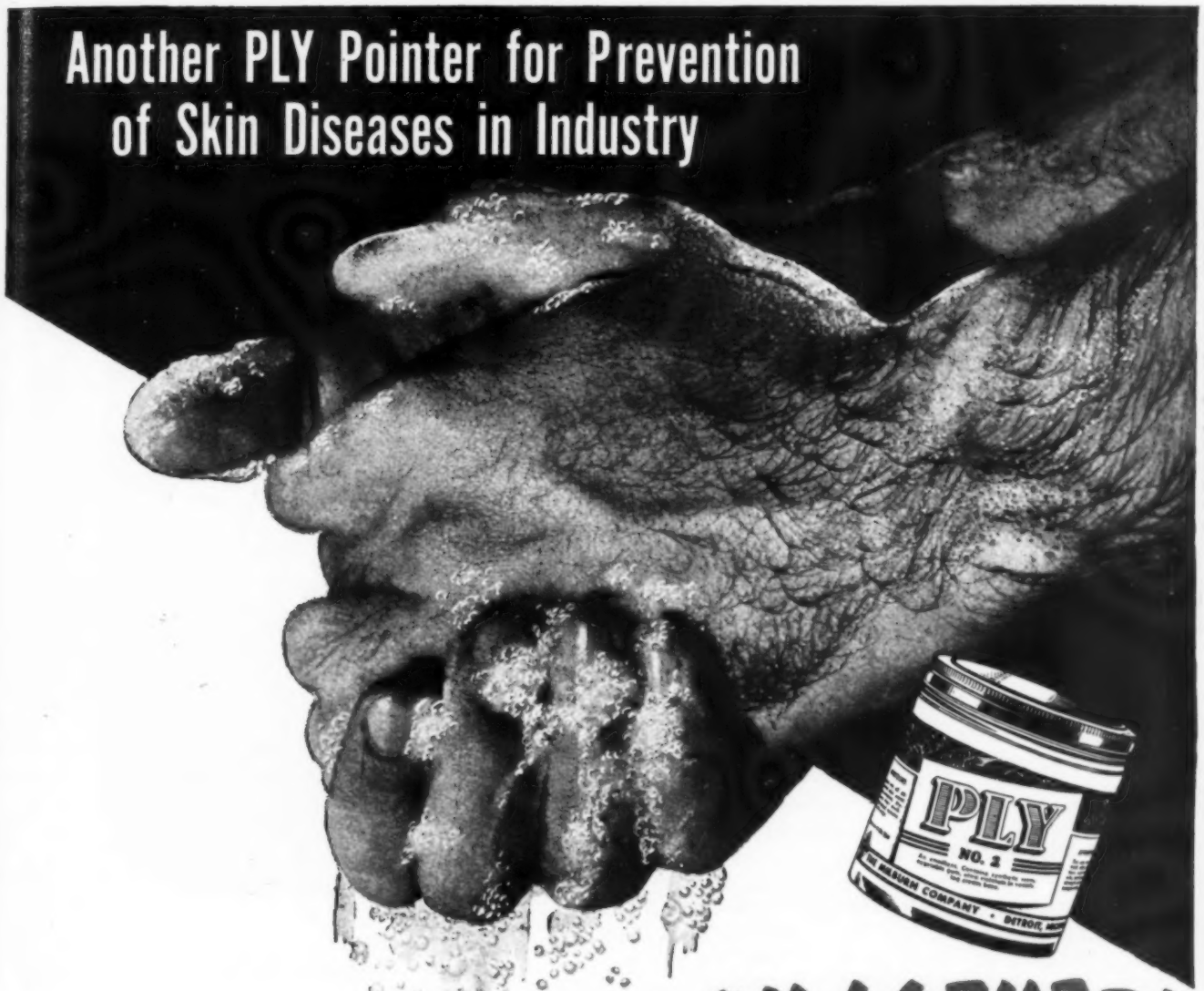
It is particularly of interest to one who has followed industrial medicine as a specialty for over 20 years to see the enlightened point of view in this volume; to one who has seen so many examinations made, has made them himself, and has reviewed thousands of such examinations, as well as compiled many examination forms and reviewed those, it is also of particular interest to note that we now have a scientific program including the testing for near and far acuity, muscle balance, depth perception and color appreciation, instead of relying only on distance acuity such as is still found on many examination forms.

The illustrations are excellent and contain photographs from both light and heavy industries, showing the adaptation of good vision to different types of processes and operations.

Dr. Kuhn is to be congratulated upon doing a pioneer work in a phase of industrial medicine which has been sadly neglected for many years, and setting forth in the first important volume on the subject the elements of a good vision program in industry—in addition to showing the way in what is believed to be the first example of scientific job placement in industry.

—C. O. SAPPINGTON, M.D., Dr. P.H.

Another PLY Pointer for Prevention of Skin Diseases in Industry



THE LOW-DOWN ON LATHER!

In addition to providing positive protection—with a different PLY formula for each general group of hazards—PLY makes the dirtiest hands come clean in *plain water* . . . because of the **abundant lather** (neutral pH) that carries away all foreign substances. PLY-protected hands feel cleaner, look cleaner, *are* cleaner . . . without harsh soaps or irritating cleansers. No wonder both men and women workers prefer PLY for prevention of industrial dermatitis!

PLY LIQUID PROTECTION

Write for booklet, "The Answer to Industrial Dermatitis"

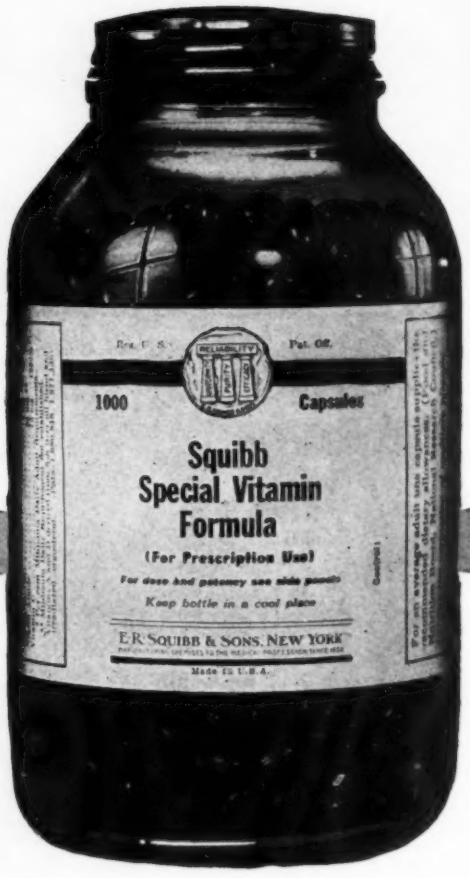
THE MILBURN COMPANY

PIONEERS OF SKIN PROTECTION IN INDUSTRY

3246 E. WOODBRIDGE • DETROIT 7, MICHIGAN

PLY CREAM PROTECTION

Special Vitamin Formula *Capsules*



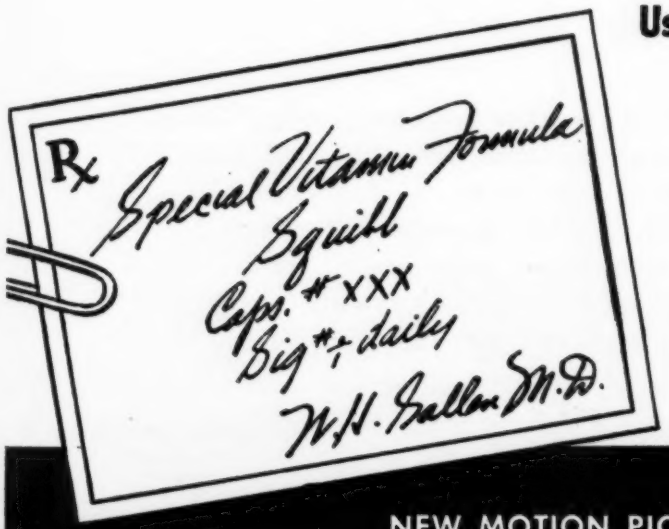
A convenient means of providing in *one capsule* the daily Recommended Dietary Allowances of vitamins as adopted by the Food and Nutrition Board, National Research Council.

Note the formula:

Each Special Vitamin Formula Capsule Squibb contains:

Vitamin A	5000 U.S.P. units
Vitamin D	800 U.S.P. units
Thiamine Hydrochloride	2 mg.
Riboflavin	3 mg.
Niacinamide	20 mg.
Ascorbic Acid	75 mg.

Sold to druggists in bulk—to be prescribed in quantities as needed. Low cost to patients.



Use SPECIAL·VITAMIN FORMULA for

DIET SUPPLEMENTATION . . . CONVALESCENCE . . . MULTIPLE VITAMIN DEFICIENCIES

WRITE FOR SPECIAL LITERATURE

E. R. SQUIBB & SONS

745 Fifth Avenue • New York 22, N. Y.

NEW MOTION PICTURE: Modern Nutrition — A Clinical Symposium — 1650 ft. Kodachrome and Sound — 16 mm. Loaned gratis to Medical Societies. Write for details.